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Vol. XI

CONTINUATION OF THE  
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New  
Series,  
Vol. III

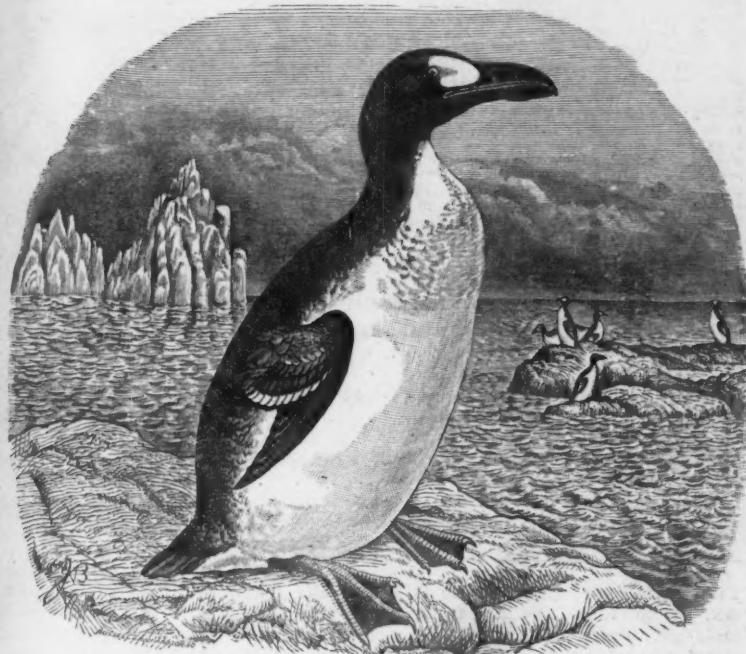
# The Auk

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‘THE AUK,’ published as the Organ of the AMERICAN ORNITHOLOGISTS’ UNION, is conducted as a Magazine of General Ornithology. In general character it differs little from the late ‘BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB,’ of which it forms virtually a Second Series.

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J. J. Audubon.

THE AUK:  
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ON AN OLD PORTRAIT OF AUDUBON, PAINTED  
BY HIMSELF, AND A WORD ABOUT SOME  
OF HIS EARLY DRAWINGS.

BY R. W. SHUFELDT.

SOMETIMES during the latter part of May, 1885, I was the recipient of a very valuable gift from an esteemed lady of Woodstock, Louisiana, Mrs. E. C. Walker. This was nothing less than three of Audubon's early original boy-drawings of birds, and I came into possession of them through the kind intercession of Mrs. Walker's daughter, Mrs. Jamar, wife of Lieutenant Jamar of the 13th U. S. Infantry, then stationed at Fort Wingate, New Mexico.

It will be remembered by those conversant with the life of Audubon, that sometime during his youth he spent a year or more with his parents at Nantes, France. His wife tells us in his biography, that while at Nantes, this famous young devotee of nature made a hundred drawings of European birds. These were brought back by him in his portfolio on his return to America, and it proves to be that it is three of these juvenile efforts that I now have in my possession. Rare old treasures they are to be sure, and would that I could commit to paper the quickly-passing thoughts they inspire in my mind, as I hold them up one at a time before me! They cause us to wonder whether Audubon

really dreamed, as he worked away over these crude productions, of the man he was to be some day. And we wonder, too, as we examine them, at the rapidity of his artistic development and improvement.

They are each and all drawn by a combination of crayon and water-colors upon a thin and *not expensive* kind of drawing-paper, now brittle and soiled by age. Audubon had evidently numbered these drawings of his, and these numbers are 44, 77, and 96, a European Magpie, a Coot, and a Green Woodpecker, respectively. Sometime ago I had them all reduced by photography, with the view of publishing them, but although I have been temporarily disappointed in this, I may yet have an opportunity to bring them out in some other connection.

As I have said, the earliest of these drawings is the one of the Magpie—and let us look at it for a moment. It is life size, as they all three are, and the bird is represented standing on the ground, being drawn lengthwise on the paper. The execution is quite crude, though the naturalist ‘sticks out’ in it, for notwithstanding the somewhat awkward position the bird is in, there is life in it. The ground is simply a wash of pale green and brown, while over on one side of the paper he has ‘tried his brush,’ having made some rough concentric circles with paint dabs about them. Beneath this drawing we find written in lead-pencil in two lines, “La Pie, Buffon,” “Pye, Piot Magpye, Pianet, english,” and over to the left-hand corner, “No. 44.”

The second picture is that of a Coot, and is a marked improvement upon the Magpie. Far more pains have been taken with the feet, legs, bill, and eye, though little has been gained in the natural attitude of the bird. It is also represented standing up on the dry ground, which is here of a pale violet wash, unbroken by anything in the shape of stones or vegetation. Except very faintly in the wing, no attempt has been made to individualize the feathers, the entire body being of a dead black, worked in either by burnt cork or crayon. Beneath this figure has been written in lead-pencil, but gone over again by the same hand in ink, “La foulque ou La Morelle—Buffon, Riviere Loire Joselle—” “English—the Coot,—”

As is usually the case among juvenile artists, both this bird and the Magpie are represented upon direct lateral view, and no evidence has yet appeared to hint to us of the wonderful power

Audubon eventually came to possess in figuring his birds in their every attitude.

There is a peculiar pleasure that takes possession of us as we turn to the third and last of these figures, the one representing the Green Woodpecker (*Gecinus viridis*). It is a wonderful improvement, in every particular, upon both of the others. The details of the plumage and other structures are brought out with great delicacy, and refinement of touch; while the attitude of the bird, an old male, is even better than many of those published in his famous work. The colors are soft and have been so handled, as to lend to the plumage a very flossy and natural appearance, while the old trunk, upon the side of which the bird is represented, presents several evidences of an increase of the power to paint such objects. We find written in lead pencil beneath this figure, in two lines, and in rather a Frenchy hand, "Le Pic vert, Buffon," "the Green Woodpecker—British Zoology."

When Mrs. Walker presented me with these drawings, I received a very valued letter from her with them, and in it she tells me that "there was a portfolio of quite a number and variety of birds left with my father by Mrs. Audubon, but they have been given to different members of our family. He left a half-finished portrait of his wife and two sons, a portrait of himself in oil colors, taken by himself with the aid of a mirror and a life size American Eagle; were they now in my possession I would most willingly send them for your inspection."

"Mrs. Audubon was governess in my father's family for several years, also in that of a neighbor's of ours. I presume you are aware she supported herself and sons by teaching during the years of Mr. Audubon's wanderings through America in pursuit of his collections. I was but a child at the time. He was with us eight months [in Louisiana], but during the greater part of the time was wandering all over the State, walking the almost entire time;—no insect, worm, reptile, bird, or animal escaped his notice. He would make a collection, return home and draw his crayon sketches, when his son John would stuff the birds and such animals as he wished to preserve. I regret greatly, Doctor, that I cannot gratify you in giving a more minute account of Mr. Audubon's life while with us. But I was too young at the time, and as all of the older members of my family have passed away, I cannot collect such items as I might have done some years since. The two [three] crayons I beg you will accept."

Several months after receiving this letter, Mrs. Walker came to Fort Wingate to visit her daughter, and to my great pleasure brought with her the oil-painting of Audubon she speaks of in the letter just quoted. I hold this valued little art-treasure in my left hand as I pen these words. It is a quaint and winning picture, painted on rather thin canvas, and tacked to a rough, wooden frame, some 26 cms. by 31 cms., and evidently handmade. But the hair, *the eyes*, the mouth, the nose, are Audubon's! Not only that, but given us by Audubon's hand, and that grand old naturalist's face grows upon us as we look into it. He wears an old-fashioned dark-green coat, and a still more old-fashioned neck-cloth and collar. The background is filled in by rather a rosy-tinted sky, shading off into a blue above.

I was permitted to have a photograph made of this picture, which was kindly and handsomely executed for me by Mr. Ben Wittick of Albuquerque, N. Mex. The negative was at once forwarded by me to my friend Mr. A. Richmond Hart of the famous photo-engraving establishment of Park Place, New York, and we are to thank the skill of his workmen for the reproduction of the photograph in the illustration of this old oil painting which now accompanies this article.

Taking everything into consideration, I believe the members of the A. O. U. will pardon the pride that arises within me, at having succeeded in reproducing such a picture *as this* of Audubon in the publication of an organization that we must all appreciate he would rejoice to know existed in this his own, and well-beloved country. I only hope, too, it will give others as much pleasure on seeing his face in 'The Auk,' as it has me in introducing it there, and I believe it will.

My Audubon relics hold a high place, in my eyes, among my earthly treasures, and I have in my possession at the present writing a long letter of his, written to Richard Harlan, and announcing in the P. S. his just having secured a "New Hawk" which he describes and names as Harlan's Buzzard. This letter was presented to me by Mrs. Audubon herself many years ago, and accompanied by a charming little note of presentation from the old lady, saying it was the last letter of her husband's that she possessed, etc., etc. This valued note I also have, and naturally prize it very highly. The letter itself has already been published in the 'Bulletin of the Nuttall Ornithological Club,' Vol. V, 1880, pp. 202, 203.

ON THE AVI-FAUNA OF PINAL COUNTY, WITH  
REMARKS ON SOME BIRDS OF PIMA AND  
GILA COUNTIES, ARIZONA.

BY W. E. D. SCOTT.

*With annotations by J. A. Allen.*

(Continued from page 389.)

III.

51. *Columba fasciata*. BAND-TAILED PIGEON.—Common in the Catalina Mountains for almost the entire year. Breeds in July. I have met with it commonly in May and June as low down as 3500 feet, in flocks feeding on wild mulberries. It was not uncommon about the middle of April in the pine region, and I saw several flocks late in November, 1884 and 1885, in the same locality. In the fall, from the middle of September until early in December, I have met with it almost daily in flocks ranging from half a dozen to several hundred individuals. This later observation is from the oak region of the Santa Catalinas. I did not find the species in the Pinal Mountains, nor am I aware of its occurrence either about Tucson, Florence, or at Riverside.

52. *Zenaidura macroura*. MOURNING DOVE.—Resident throughout the entire region under consideration, except in the pine forests, where it probably occurs in summer. Near my house it is rare in winter, but abundant during the warmer portions of the year.

53. *Melopelia leucoptera*. WHITE-WINGED DOVE.—Though very generally distributed up to an altitude of 3500 feet, throughout the entire region, it is much more abundant in certain localities than at others. At a point about fifteen miles from Florence, on the road from that place to Riverside, is a spring known as the Little Cottonwood, where I found the birds by hundreds, in April and May, 1882. I have taken the eggs fresh, about the middle of May in the same cañon that my house is in, at an altitude of 3500 feet, but the bird is here rather uncommon. In the same locality I have also taken young just leaving the nest, June 4, 1885.

54. *Columbigallina passerina*. GROUND DOVE.—Not uncommon about Tucson and Florence, and also at Riverside. I have not met with it on the San Pedro, nor in the neighborhood of my house in the Santa Catalina range.

55. *Scardafella inca*. INCA DOVE.—The only points where I have seen this species are Tucson and Florence, where it is, especially in the latter place, of common occurrence during the warmer portion of the year. The birds are very tame and seem to affect particularly the streets and corrals and gardens in the heart of the town.

56. *Cathartes aura*. TURKEY VULTURE.—Rather common at the lower altitudes throughout the year, but migratory in the Catalina region, where I have not met with it above 4000 feet in winter, and it is rare even at that altitude at that season. I noted it in the pine woods as rare late in April, 1885, and took a nest containing two fresh eggs in the oak region of the Santa Catalinas, altitude 5000 feet, May 2, 1885.

57. *Circus hudsonius*. MARSH HAWK.—My records are from about Tucson in the fall, winter, and early spring, and also from the San Pedro River in January, 1886.

58. *Accipiter velox*. SHARP-SHINNED HAWK.—Common during the fall migration, from September 25 until the middle of November in the oak region of the Santa Catalina range. Pine region of the Catalina Mountains, one seen on November 27, 1884. San Pedro River, March 1, 1885, a few noted. Pines of Catalinas, 3d-8th November, 1885, several seen. San Pedro River, 26th-29th January, 1886, two noted. It was common in the fall of 1882 on Mineral Creek. These are all my notes in regard to this species.

59. *Accipiter cooperi*. COOPER'S HAWK.—Common. Resident and breeds in the oak region of the Catalina Mountains. But most abundant during the fall migration, which begins late in September. I have found two nests in this locality, both containing young just hatched. They were taken on June 9 and 11, 1885, and both were built in cottonwood trees, about sixty feet from the ground, and near springs.

I also found the birds common on Mineral Creek in August, 1882, and have records of its being seen during the several visits I have made to the pine region of the Santa Catalina Mountains.

60. *Parabuteo unicinctus harrisi*. HARRIS'S HAWK.—Mr. Brown has taken this species on a single occasion near Tucson.

61. *Buteo borealis calurus*. WESTERN RED-TAIL.—Resident and breeds abundantly throughout the entire region. Though many breed along the water courses, selecting generally a high cottonwood or sycamore, I have found them nesting quite as commonly in the low mesquites, miles from any water. In these cases the nests are not more than twenty and often as low as ten feet from the ground, and I found a nest once but seven feet from the ground. Not infrequently, too, I have seen the nests placed in a giant cactus where the lowest arms branch from the main trunk. On the San Pedro slope of the Santa Catalina range at an altitude of 3500 feet on March 12, 1885, I took three eggs, which had been incubated for at least a week, from a nest situated in a mesquite tree rather less than ten feet from the ground. The only instance where I have met with the very dark phase of this subspecies was near my house. It is No. 1130, ♂, and was taken on the 11th of October, 1884. The specimen is now in the collection of the American Museum of Natural History in New York.

On one occasion in 1883 I took a nestling which I kept for some eighteen months. The bird was a male, I think, and on moulting in the spring of 1884, when a year old, it assumed the full breeding plumage with clear red tail.

62. *Buteo abbreviatus*. ZONE-TAILED HAWK.—This species has been so fully discussed by Dr. Mearns in a recent number of this journal (Auk II, pp. 63-69, January, 1886) that it will suffice to say that I have met with it at all the points where I have collected, that I have records of its breeding throughout the region, generally in April, and that in the San Pedro region and about Tucson it is apparently strictly migratory.

On two occasions I have seen from the railroad, while passing through the country between Casa Grande and Bowie stations, flocks of at least fifty birds of this species, evidently migrating and closely associated together. This was in the early part of September, 1882, and as the train was going very slowly, and I was close to the birds, and had become very familiar with them in life about Riverside in the months just preceding, I could be very certain of my identification.

63. *Buteo swainsoni*. SWAINSON'S HAWK.—Only met with in the immediate vicinity of Tucson where, during the warmer portion of the year, it is common. I have seen flocks of this species congregated together, evidently migrating, in September. This was on the plain just outside of Tucson about the middle of September, 1882.

64. *Asturina plagiata*. MEXICAN GOSHAWK.—Mr. Brown tells me this species is not uncommon in the spring and during the breeding season in the vicinity of Tucson. I have not met with it at other points, but saw the species on a few occasions while driving in the neighborhood of Tucson in May, 1883.

65. *Aquila chrysaëtos*. GOLDEN EAGLE.—Common resident throughout the region at an altitude above 4000 feet. I have seen the birds carrying material for nest building early in December and noted them mating at about the same time. The birds were among those I saw almost daily throughout the year near my house in the Catalina Range.

66. *Falco mexicanus*. PRAIRIE FALCON.—A rather common resident on the plains throughout the region.

67. (?) *Falco columbarius*. PIGEON HAWK.—A small Falcon, seen several times at a considerable distance in the pine region of the Catalinas, I can only refer to this species.

68. *Falco sparverius*. SPARROW HAWK.—Resident and common up to an altitude of 5000 feet at all the points visited, but rarely seen above that elevation. It breeds commonly in deserted Woodpecker holes in the giant cacti wherever they flourish, nesting in late April and May.

69. *Polyborus cheriway*. AUDUBON'S CARACARA.—Rather common about Tucson during the warmer portion of the year, and a few are apparently resident. I have no records of the species from other points.

70. *Pandion haliaëtus carolinensis*. AMERICAN OSPREY.—Not uncommon along the larger water courses, but I have no records of it in winter, nor of its breeding.

71. *Strix pratincola*. BARN OWL.—Taken on three occasions near Tucson, which are the only records I have of the species.

72. *Megascops asio trichopsis*. MEXICAN SCREECH OWL.—Common resident and breeds about Tucson in April and early May. Also taken at

Riverside breeding in April. I took a male (No. 1675) at an altitude of 4500 feet on the San Pedro slope of the Santa Catalina Range on January 20, 1885.

This is one of the species that particularly affect the growths of giant cactus, it living and breeding in deserted Woodpecker holes.

73. *Bubo virginianus subarcticus*. WESTERN HORNED OWL.—Common resident and breeding in February and March, according to altitude. Twice I have found nests in small caves on the bluff sides of cañons near my house. Both contained young birds.

74. *Speotyto cunicularia hypogaea*. BURROWING OWL.—Near Benson, which is just outside of the region indicated on the map and to the east of it, is a very considerable colony of these birds, and I have heard from good observers of another colony northeast of Florence. The bird is unusual, however, in this area.

75. *Glaucidium phalænoides*. FERRUGINEOUS PYGMY OWL.—Not uncommon about Tucson. I have no record of its occurrence at other points, but have strong reasons for believing it obtains not at all rarely throughout this entire region up to an altitude of at least 5000 feet.

76. *Micrathene whitneyi*. ELF OWL.—This species is decidedly the commonest Owl breeding in this region, and is, at least during the breeding time, very abundant. I have found it at all the points where I have collected up to an altitude of 5000 feet. While it seems particularly to like the Woodpecker holes of the giant cactus, I found it on one occasion breeding in a deserted Woodpecker's nest in a mesquite tree. The eggs range from two to four in number, and once I took five from the same nest. The ordinary number is three. On one occasion while collecting with Mr. F. Stephens, near Fuller's Ranch, about the last of May, 1883, we secured with no particular exertion, over twenty of the birds and a dozen or more nests of eggs, in about six hours. I give this so that an idea of their abundance may be had. They frequent holes only when breeding.

77. *Geococcyx californianus*. ROAD-RUNNER.—A common resident up to an altitude of 4000 feet; and in the warmer months and early fall they are often to be found as high as 5000 feet, and even a little higher, thus going well into the evergreen oak belt. While perhaps more abundant on the plains, I found them in the Pinal and Catalina Mountains, and in the latter locality they bred commonly.

From my notes I take the following abbreviated data in regard to some of the various nests found on the San Pedro slope of the Catalina Mountains.

March 17th, 1885. Altitude, 3000 feet. A nest in a cholla, three and a half feet from the ground. A very compact and well built structure, looking much like the common Crow's nest as found in the East, except that the loose outer part of twigs is not so bulky as in that species. The inner structure is lined with grasses and cow and horse dung. The nest contained two fresh eggs, and the birds had evidently not finished laying. This is the earliest date that I have found the species breeding in this region.

March 23, 1885. Altitude, 3200 feet. Found an unfinished nest in a cholla 2 feet 6 inches from ground. Visiting the same nest on 25th March, it was finished and contained two fresh eggs. Structure identical with that found on 17th March. On the 27th it contained four fresh eggs, which I secured.

March 28, 1885. Altitude, 3400 feet. Nest in cholla, two feet from the ground. Similar to nest of 17th of March, being built of same materials. Contained, when found, two fresh eggs. On April 1 it contained six eggs and the parent bird was sitting.

I have data of other nests built at considerable height, the greatest being rather more than fifteen feet from the ground, and though a preference seems to be shown for building in the chollas, yet I have found nests in almost all the varieties of trees that grow in the region frequented by the birds. The greatest number of eggs found in one nest is eight. The males share the duties of incubation with the females and show quite as great concern in the care of the young.

[Mr. Scott's collection contains a series of five young of different ages. These show that the first or nestling plumage differs little from the adult stage, except in being softer or more fluffy and downy. In the youngest specimens, apparently not many days old, the clothing feathers are tipped with a white hair-like appendage, one-fourth to half an inch in length. These hair-like tips soon fall off, only a very few remaining on specimens nearly ready to leave the nest. The chief difference in color consists in the broad shaft stripes of the feathers of the neck and breast being less sharply defined in the young than in the adult, and in the brown edgings bordering the shaft-stripes being paler.—J. A. A.]

78. *Coccyzus americanus*. YELLOW-BILLED CUCKOO.—Rare during the months of June and July on the San Pedro slope of the Catalina Mountains, ranging as low as 4000 feet. The only specimen collected is an adult male (No. 500), taken July 4, 1884, at an altitude of 4000 feet.

79. *Trogon* —?—A species of *Trogon* undoubtedly occurs casually in the Catalina Mountains. A laborer who had manifested considerable interest in my collections, described to me a bird he had seen only a few hours before, which he believed "was a kind of bird of paradise." He said it was quite tame, allowing him to approach closely. "Had a very long brilliant tail, and was bright pink on the breast." This was on September 20, 1884, and about a mile from my house. Subsequently two other men saw the same or a similar bird.

80. *Ceryle alcyon*. KINGFISHER.—A resident species. Met with at the several points where I collected, but it retires from the mountains in the winter. It is a curious fact that the species is frequently to be found in this region far from water, feeding on the larger insects and lizards. It always seemed strange to meet the bird under 'desert' conditions.

81. *Dryobates villosus harrisii*. HARRIS'S WOODPECKER.—Resident in the pine forests, and a winter visitor to the lower altitudes, though I believe thus far it has not been detected about Tucson. It generally made its appearance about my house (altitude 4500 feet) early in November, and

was rather common until the last of January. On my visits to the pine woods, both of the Pinal and Catalina Mountains, I have always found it rather common.

82. *Dryobates pubescens gairdnerii*. GAIRDNER'S WOODPECKER.—A rare species, apparently, which I have only met with in a single locality. This was on the Gila River, near Riverside, in April, 1882, where I took a single male, the only one seen.

83. *Dryobates scalaris*. TEXAN WOODPECKER.—Common in all the localities visited. Limited in its upward range on the mountains to about 5000 feet; not at all common above 4000 feet. On the plains, especially in the mesquite parks, it is very common, and it also affects the cholla region. Here I have frequently met with the species digging in the ground at the roots of a cactus. They are at times gregarious. I particularly noticed this in December, 1885, when I frequently met the species in flocks of from four to a dozen, on the plains at an altitude of 3000 feet. I have found the species breeding in May at an altitude of 3500 feet. On May 27, 1884, I found a nest in a mesquite tree. The opening to the nest was fourteen feet from ground. Eggs, five, nearly ready to hatch.

84. *Dryobates stricklandi*.\* STRICKLAND'S WOODPECKER.—The only point where I have met with this species is in the oak region on the San Pedro slope of the Catalina Mountains. Here, except in midwinter, it is not uncommon, and Mr. Brown has found it common in the Santa Rita Mountains. I have never found it so commonly as Mr. Henshaw did in the Santa Ritas, nor have I found it gregarious, as described by Mr. Henshaw. Rarely have I met with more than two in company, and a family, two parents and three young, were the most I ever saw associated together. But I frequently met in the fall a party composed of Arizona Jays, California Woodpeckers, various Titmice and Warblers, and a pair of Strickland's Woodpeckers. The birds where I have met with them appear late in January or early in February, and are apparently already mated. A nest found on the 27 of May, 1884, was in an oak about ten feet from the ground. The nest was much like that of the Hairy Woodpecker, save that the opening was a little smaller. It contained three young birds about two-thirds grown and halffeathered. The young birds have\*at first a full red cap on the head, without regard to sex, though it is perhaps more

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\* [In 'The Ibis' for April, 1886 (pp. 112-115) Mr. E. Hargitt considers the *Picus stricklandi* of Malherbe, from Mexico, to be specifically distinct from the Arizona Woodpecker, hitherto so-called. He therefore names the Arizona bird *Picus arizone*, and gives the following diagnosis:

"*P. similis P. stricklandi*, sed dorso uniformi nec albo-fasciato distinguendus.

"Hab. In montibus 'Santa Rita' dictis in Arizona."

*D. stricklandi* is said by Mr. Hargitt to have "the upper parts barred with white, whereas in the Arizona bird the back is perfectly uniform in both old and young."

In addition to Mr. Scott's remarks respecting the red cap in the young, it may be remarked that in his series of 21 specimens, about one-fourth of them show more or less distinct white bars on the rump, irrespective, apparently, of sex or age. In some examples these bars are quite conspicuous; but none of them show any white bars on the interscapulars.—J. A. A.]

conspicuous in the young male. This gradually disappears with the first moult, though I have taken young birds in October that still showed traces of the red cap.

85. *Sphyrapicus varius nuchalis*. RED-NAPED SAPSUCKER.—So far as I am aware, this species is migratory and does not breed in the area under consideration. Nor do many remain here during the winter months. They begin to arrive early in September in the Catalina region, and are at first mostly young birds of the year. During the months of October and November they are particularly abundant, but are rarely seen in December or January, and though to be found in the succeeding spring months, February, March, and April, they are not nearly so common then as in the fall.

Many of the adult birds have, in addition to the red nuchal band, characteristic of the subspecies, a greater or less amount of red on the sides of the head and on the face.

86. *Sphyrapicus thyroideus*. WILLIAMSON'S WOODPECKER.—This species I have found only in the pine region of the Catalina Mountains. Even there it is not common and is chiefly to be met with in fall, winter, and very early in the spring. I did not find it in the pine woods of the Catalinas in April, and do not think it breeds there.

87. *Melanerpes formicivorus bairdi*. CALIFORNIAN WOODPECKER.—Common and resident in the mountain regions, both in pines and oaks, as low as 4000 feet. It was abundant in the pine woods of the Pinal Mountains late in November, 1882. And it was among the more conspicuous species in the pine forests of the Catalinas. The only record I have of its breeding is in the Catalina Mountains, where I took a nest containing three young, half-grown, on July 30, 1884. This was at an altitude of 4700 feet. The nest was in a sycamore tree, fifty feet from the ground, in a natural cavity caused by decay. The entrance was where a small branch had been broken off, leaving a natural opening.

88. *Melanerpes torquatus*. LEWIS'S WOODPECKER.—An abundant though irregular migrant in the Catalina Mountains at the lower altitudes, and probably breeds in small numbers in the pine woods. If present in the Pinal Mountains it escaped my notice. About my house it generally appeared about the 20th of September, and some years was very abundant. It stays as late as April 20, and then is not seen again till fall, though I have seen the species in the pine region above me late in the spring. In 1884, there was an unprecedented abundance of the species throughout the entire region under consideration. They came in countless numbers about the ranches, both on the San Pedro and near Tucson. Arriving early in September, they did great injury to the fruit crops raised in these regions, and I heard much complaint of them. In the oak woods they were equally abundant, living almost altogether on acorns, but spending much of the warmer portion of the day catching insects on the wing, very much as any of the larger Flycatchers do, only that on leaving the perch of observation or rest, the flight is much more prolonged than in the Flycatchers that I have seen.

[A series of eight young birds, partly in nestling plumage, show that the young in first plumage not only lack the divided, bristly tips to the feathers of the narrow nuchal collar and lower plumage, so characteristic of adult birds, but differ also from the latter notably in color. In the nestling plumage the whole upper surface of the head, including the hind head, is dull, dusky brown, with a trace of reddish on the forehead, but without greenish gloss or any metallic tints. The back and upper surface of the wings are bronzy green nearly as in the adult, with, however, in addition, broad bars of steel-blue on the scapulars and quills. These bars are especially prominent on the secondaries and inner vanes of the primaries, and are seen also in some specimens on the rectrices. The steel-blue edging the outer vanes of the quill feathers in the adult is absent; and the inner secondaries and longest primaries are tipped more or less prominently with white. The throat, fore-neck and breast are dusky-brown, varied with dull brownish white; sides blackish brown, washed with dull brownish white, the latter often prevailing; abdomen washed with dull red, this color sometimes extending forward over the breast. The forehead, cheeks, and region about the eye mixed dark red and blackish.

The specimens before me present considerable individual variation, irrespective of sex, some lacking wholly the white tips to the remiges; in some the steel-blue bars crossing the quills are not strongly defined; and the amount of red on the lower surface varies greatly.

With the beginning of the first moult the bristly tipped feathers become sprinkled through the breast plumage, and metallic tinted feathers appear on the head, producing a peculiar mottled effect.—J. A. A.]

89. *Melanerpes uropygialis*. GILA WOODPECKER.—A common resident, especially in the giant cactus regions, and occurs in numbers up to an altitude of 4500 feet. Their occurrence at this altitude seems to be coincident with the regular fall migration, as I have not noticed the species about my house in summer, though they are rather common in fall and spring, and are common at all times up to an altitude of 3000 feet. Though breeding in mesquite and cottonwood trees, they show a great preference for groves of giant cactus, which afford nesting places for thousands of pairs about Tucson, Florence, and Riverside. Near Tucson I have taken many sets of fresh eggs, from three to five in number, from May 15 until the last of the month. They do not always excavate new nesting holes in the giant cactus, but more frequently take advantage of some former nesting place. Besides their preference for this cactus in nesting, they are very fond of the fruit of this and other cacti, and frequent the plants in very large numbers at the time the fruit ripens.

90. *Colaptes cafer*. RED-SHAFTED FLICKER.—Common throughout the region, except during the breeding season, when most if not all the representatives of the species retire to the upper oak and pine forest regions, rarely being seen in summer lower down than about 6000 feet. In the series that I have collected are a number of individuals having, to a greater or less degree, the peculiar plumage of the so-called '*hybridus*.' I found the birds about to breed in the pine region of the Santa Catalina Mountains during the last week in April, 1885.

91. *Colaptes chrysoides*. GILDED FLICKER.—A rather common resident wherever the giant cactus occurs throughout the region, but is much more common in the giant cactus of the southern part of the area under consideration than to the northward. They are common all about Tucson in such localities as I have indicated, but are more rare in the San Pedro Valley. I have met with the species in early spring and fall on the San Pedro slope of the Catalinas as high up as 3000 feet. I have now and then seen single individuals in the mesquite timber, far away from any giant cactus. All that I have ever met with breeding have been in giant cactus. The breeding time about Tucson is from April 10 until the last of May. Unlike the other Flickers that I am acquainted with, the number of eggs is small, varying from two to five, which latter is the largest number I have ever found in a nest. I have in a former paper described a so-called hybrid between this species and the Red-shafted Flicker (*C. cafer*). The bird was taken by Mr. Herbert Brown, near Tucson. (For details see 'The Arizona Daily Star,' Tucson, December 16, 1884.)

92. *Antrostomus vociferus arizonæ*. STEPHEN'S WHIP-POOR-WILL.—On the evening of the 16th of April, 1885, I heard a Whip-poor-will, which I was unable to get. The note was somewhat harsher than that of the true Whip-poor-will of the East, but the same in cadence. I can only refer it to this species. This was at a point near my house in the Catalina Mountains, and is the only time I have met with the bird.

93. *Phalaenoptilus nuttalli*. POORWILL.—An abundant migrant. It breeds in the mountain regions but, so far as I am aware, does not occur much below an elevation of 3000 feet. They arrive from the middle to the last of February in the Catalinas, and are in full song at the time of arrival. I have heard them singing as late as November 10, which is the latest record I have of their stay in the Catalinas. (For the occurrence of the species at the higher altitudes, see Auk, Vol. II, No. 4, p. 256.) These birds are frequently to be heard singing in the daytime and my records of this are numerous. "Catalinas, 4000 feet, 15th July, 1884. Bright sunshine. Heard a *Phalaenoptilus nuttalli* singing continuously from 12 M. till 12.20 P.M." I have similar records of singing in the forenoon and afternoon, and usually the birds begin singing before it is dark.

94. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK.—Met with a few times in the early spring in the Catalinas at an altitude exceeding 4000 feet. Not observed at other times of the year, and apparently uncommon at any time.

95. *Chordeiles texensis*. TEXAN NIGHTHAWK.—An abundant migratory species, below an altitude of 4500 feet. Breeds commonly. About Tucson this species is particularly common during the months of May and June, and I observed it at Florence and Riverside all through the summer months and early in October. I have also notes of their occurrence, though by no means so commonly, both in the Catalina and Pinal Mountains, up to the altitude indicated above. In the Catalinas I found a pair breeding May 20, 1885, at an altitude of 3500 feet.

96. *Chætura vauxii*. VAUX'S SWIFT.—The only time that I have met

with this species was early in October, 1884, on the San Pedro slope of the Catalina Mountains, at an altitude of 3000 to 4000 feet. From the 2d to the 6th of the month they were rather common, from a dozen to twenty being noted each day. The birds are, as far as I am aware, very like the common Chimney Swift in general habits and flight. Mr. Allen has very kindly identified the species for me, from a female (No. 996) taken October 2, 1884, in the locality above mentioned.

97. *Micropus melanoleucus*. WHITE-THROATED SWIFT.—An abundant migrant, and a few probably occur in winter. I have no positive record of its breeding in the area in question, but have constant records of seeing the species in the Catalinas, from the middle of March until August. The bird is probably most abundant about the middle of May in the vicinity of Tucson, at which time I have seen them by hundreds. Here at this season they do not appear to have the habit of high flight so noticeable in Colorado and at other points where I have met with them, but are to be seen skimming low over ponds, and even close to the ground, in pursuit of insects, and quite as tame and unsuspicious as the Chimney Swift of the East. That a few are winter residents there can be little doubt, as my records mention them every month in the year, save February, either in the Catalinas or near Tucson. On January 5 of the present year, which is about midwinter in this region, I saw five in the foothills of the Catalina Mountains, at an altitude of about 3500 feet.

98. *Trochilus alexandri*. BLACK-CHINNED HUMMINGBIRD.—A common summer resident in the Catalina Mountains, where it breeds very commonly. Arrives early in March, and is abundant by the last of that month. By the last of April the birds are mated and begin breeding; and I have found nests with fresh eggs late in July and early in August. By the 10th of October they have all left the region in question.

Though I have found many, at least a hundred, Hummingbirds' nests in the Catalinas in vicinity of my house, and have been very careful to identify the owners, and though most of the species to be presently mentioned are quite as abundant as *Trochilus alexandri*, and though two at least (*I. latirostris* and *T. costæ*) are present all the time that *T. alexandri* is found, yet I have no positive record of any other Hummingbird breeding in this immediate locality.

I have not found this species to be of common occurrence above 7000 feet altitude in the Catalina Mountains. It is common and breeds in the neighborhood of Fort Lowell, which is North of Tucson, and lies at about the same altitude, but Mr. Brown regards it as rare about Tucson, and has no record of its breeding there.

99. *Trochilus costæ*. COSTA'S HUMMINGBIRD.—My first acquaintance with this species was made at Riverside in April and May, 1882. The birds were not very common there, but were the only Hummingbirds observed. On May 5, 1882, I found a nest, the female sitting, and the very conspicuous male in close attendance, often perching on a twig but a few inches away. This nest was built in a cottonwood tree, almost at the extremity of one of the branches, and about thirty-five feet from the ground.

In 1884 I did not meet with the birds in the Catalinas till late in July, and then only sparingly. But in 1885, in the same locality, the birds were very common by April 5, particularly the males, in the most gorgeous plumage. The absence of adult females for the next six weeks was very noticeable. I think I took only three, though the males were common all the time. About the 20th of May young birds of the year began to be abundant, and adult birds of either sex were difficult to find. The young birds were common all through June; I could often count twenty near my house, but after June 1 I was unable to get any adult birds of either sex. I do not think the birds bred in the Catalinas, but think that probably they did breed in numbers on the San Pedro River.

100. *Trochilus anna*. ANNA'S HUMMINGBIRD.—The only time that I have met with this species was in the Catalina Mountains at an altitude of 5000 feet, when on October 1, 1883, I took a male bird, young of the year (No. 420 of my collection). Mr. Brown has no records of its occurrence about Tucson at any season, and I am disposed to regard it as a rare species throughout the area under consideration.

101. *Trochilus platycercus*. BROAD-TAILED HUMMINGBIRD.—Rather common spring and fall migrant, and a few remain during the summer, doubtless breeding in the higher altitudes of the Catalinas. All of the birds collected by me in the region about my house, even in spring, are either females or males that have not assumed full plumage. The birds seem to be most common in the Catalinas from August 20 to September 10, and a few remain till October 1. They arrive here in the spring about April 1. The species doubtless occurs, at least during the migrations, throughout the entire area, though my only notes are from the Catalinas.

102. *Trochilus rufus*. RUFous HUMMINGBIRD.—Not common in spring, but young birds of the year begin to appear about the middle of July, and by August 1 are common. In August and September they are very abundant, feeding on thistles and a kind of scarlet flower very similar to the salvia or scarlet sage. It is no uncommon sight at such places and times to see from twenty to fifty of the birds at once. They leave early in October. I have taken very few adult birds of this species at any season, and only one male in full plumage in a large series. These observations are based on data accumulated in the Catalina Mountains: altitude 4000 to 6000 feet. There can be little doubt that the species breeds, perhaps commonly, at the higher altitudes in these mountains.

103. *Trochilus allenii*. ALLEN'S HUMMINGBIRD.—The only record that I am aware of, of this species from the territory of Arizona, is an adult male (No. 589) taken in the Catalina Mountains at an altitude of 4500 feet, July 23, 1884, and now in the collection of the American Museum of Natural History at Central Park, New York City.

104. *Trochilus calliope*. CALLIOPE HUMMINGBIRD.—This species seems to be of uncommon occurrence in the area under consideration. I have only two records of its capture, both in the Catalina Mountains, at an altitude of 5000 feet. These are both females, apparently adult (No.

730, ♀ ad., 12th August, 1884; No. 2141, ♀ ad., 14th April, 1885). Mr. Brown has not met with this species about Tucson nor at other points visited by him.

105. *Iache latirostris*. BROAD-BILLED HUMMINGBIRD.—During the spring, summer, and early fall of 1884 this was a rather common species in the Catalina Mountains, from an altitude of 3500 to 5000 feet, but in the corresponding season of 1885 the birds were apparently rare. The birds arrive at this point early in April, the 5th of that month being my earliest record, when I took two adult males. They remain throughout the spring and summer, leaving from the middle to the last of September. I took an adult female on June 26, 1884, that contained an unlaid egg with shell nearly formed, so that there can be little doubt that the birds breed at this point. Besides, I have the young birds in first plumage from July 1st until late in August.

[Young birds of the year, of both sexes, have the upper plumage edged with fulvous, particularly on the head and lower back. The young males have an oblong blue patch on the throat, each feather of which is edged with dark gray, like the rest of the lower plumage, with sometimes a few metallic green feathers on the sides of the breast. In one specimen (No. 703, August 9, 1884) the breast is about half-covered with metallic feathers.—J. A. A.]

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## BIRD NOTES FROM LONG ISLAND, N. Y.

BY WILLIAM DUTCHER.

1. *Megalestris skua*. SKUA.—Mr. M. F. King, one of the crew of the Life Saving Station at Amagansett, Suffolk Co., sent to me, in the flesh, a specimen of this species. He informed me that he found the bird March 17, 1886, in a large piece of ice which had formed on the meadow back of the beach. He also stated that January 9, the tides were exceedingly high, by reason of a very severe northeast storm and gale of wind. He thought the bird probably died near the shore and was driven by the very violent surf and wind to where it was found. The high tide was followed immediately by very cold weather, which encased this bird in its icy tomb, thus preserving it until found, and permitting a new record for Long Island and the third and most southern one for North America.\* Mr. King stated further that

\* The previous records may be found in Bull. Nutt. Orn. Club, III, 1878, p. 188; Auk, I, 1884, p. 395.

no ice was driven on the beach during the past winter, therefore the bird must have died while on or near the beach. It is probable that it died of starvation, as it was very much emaciated. The sex could not be determined, as the viscera had commenced to decompose.

2. *Sterna fuliginosa*. SOOTY TERN.—To my friend Mr. Charles Earle, of New York City, I am indebted for the privilege of adding still another bird to the Long Island list. The month of September, 1878, was spent by him at Lake Ronkonkoma, which is the geographical centre of the island. A very heavy storm occurred on the 13th of that month, during which he shot the Tern here recorded. He informs me that he saw thirty or more Terns but does not recollect of what species. He has no record of the direction or duration of the storm, but remembers that the Terns "were flying diagonally across the Lake from the southwest, and continued their flight toward the Sound. I should certainly conclude from all the conditions of the storm that the birds were carried from their normal habitat by its force. In my two years' wanderings about Ronkonkoma I never observed any Terns before on the lake, although a local gunner told me he had sometimes observed them, but I should say they were stragglers from the coast." As there was no published description of the phase of plumage presented by this specimen I submitted it to Mr. Robert Ridgway, who writes, under date of Washington, January 19, 1886, as follows: "I have carefully examined the Tern, which is undoubtedly *S. fuliginosa*, and is a young bird apparently in its second year. It is in moult, and a very singular thing is that the new feathers appearing on the breast and other lower parts are darker than the old plumage. From this I infer that another moult would be necessary—probably during the following spring, but possibly not until the next autumn—before the white plumage of the adult would be assumed. It is possible the feathers themselves might eventually fade to white, but I regard this as hardly probable. I send a description, as requested."

"*Sterna fuliginosa*. A young bird in transition plumage (apparently in second year) from Lake Ronkonkoma, Long Island (Sept. 13, 1878, Charles Earle, collector), differs from the young in first plumage as described in 'Water Birds of North America' (Vol. II, pp. 312, 313) as follows: The rather light sooty brown plumage of the lower parts is much mixed or clouded with a darker and less brownish sooty tint, these dark feathers

(belonging to the new dress, just being assumed) having the whole of their underlying portion grayish white, this color showing through wherever the plumage is disarranged. The upper and lateral portions of the head are clouded with blackish (new feathers). The wing-coverts and tertials are entirely destitute of the white terminal bars of the first plumage, the general surface of the wing being dark sooty brown, mixed with new feathers of a decidedly darker color, these prevailing over the anterior portion of the lesser covert region, where contrasting very boldly with the broad and very distinct white border to the fore arm and bend of the wing. The old feathers of the back and scapulars are sooty brown, without white tips (the latter being worn off?); the new feathers, which largely prevail, are dark brownish slate, with a chalky cast in certain lights, bordered terminally with ashy white—these lunulate markings being very different from the much broader, much more distinct, and directly transverse white tips of the first plumage. The lateral rectrices are much more elongated and attenuated than in the first plumage, but less so than in the adult; in color they are much like those of the latter, being white for the basal half or more, passing gradually into grayish dusky toward the end, the tip again grayish, especially on the outer web. Lining of the wing grayish white, becoming nearly pure white on the longer axillars, clouded faintly with light sooty gray toward the anterior and outer border of the wing. Anal region abruptly grayish white; crissum and lower tail-coverts grayish white or pale gray, the feathers with darker tips. Wing, 11.20; tail, outer rectrices, 5.40, middle rectrices, 3.50; culmen, 1.60; gony, .80; tarsus, .95; middle toe, .80."

3. *Histrionicus histrionicus*. HARLEQUIN DUCK.—Mr. Knoess informs me that during the time he has been engaged as a taxidermist at Riverhead, he has mounted four specimens of this species. I have secured the following particulars regarding the capture of three of them.

Mr. W. W. Reeves, of Greenport, Suffolk Co., writes: "I shot the Harlequin Duck in January, 1865, on Gull Island, while I was keeper of the light. There were four of them living around the Island sometime before I had a chance to kill one. The bird I secured was a male. I crippled a female at the same time but did not secure her, as the tide was running so swiftly. They were the first of the kind I ever saw, nor have I seen but two since. They are a diving Duck, and like to play around the rocks. I watched them play several times while they were there; they chased each other about as boys do while playing tag."

"I have gunned over forty years, and as far south as Savannah, Ga., and never saw this Duck anywhere except on the island, so I think it a rare bird."

Mr. Josiah Robbins, of Bayshore, Suffolk Co., writes: "The

Harlequin Duck which I have is a male and was alone when shot. It was killed in the latter part of January, 1883, in the South Bay, opposite Fire Island Inlet. The bay was frozen over at the time, except a few air-holes. It was killed by Capt. Samuel Hulse, who is about fifty-five years of age, and has always followed the bay. He says it is the only one that was ever seen here, to his knowledge."

Mr. George E. Post, of Greenport, writes: "My Harlequin Duck I think is by no means common. They are here only in very cold winters, and even then only a few. The one I have was shot on the shore of Long Island Sound, near the village of Southold. I think it is a male."

Giraud says of this species: "On the shores of Long Island I have known the young only to occur, although some of our most experienced bay-men say that a number of years since the occurrence of the adult was not unusual."\*

It is probable, owing to the marked appearance of this bird, that almost all that are shot in this locality, where it is so rare, are preserved, and we therefore in the above records have approximately its numbers in the waters that surround the island.

4. **Ardea candidissima.** SNOWY HERON.—Although these birds are not uncommon on Long Island in the summer months, I do not recall any published notes of their breeding. Mr. L. S. Foster and the writer visited a very extensive pine and cedar swamp on Great South Beach, off Sayville, Suffolk Co., May 30, 1885, and while there saw three individuals of this species. One was alone, but the others were mated and undoubtedly were preparing to breed. They were watched for some time and were always flying to or from a pine tree in the swamp. All their actions indicated that they were nest building. The one first seen was carrying a long stick in its bill.

5. **Crex crex.** CORN CRAKE.—In the shop of Messrs. Lucas & Buck, of Sag Harbor, I found a mounted specimen of this species, which I purchased. They bought it about August 15, 1885, while in the flesh, from a farmer residing near Amagansett, Suffolk Co. It was, when shot, on an upland or dry meadow, in company with some Meadow Larks (*Sturnella magna*). The sex was not ascertained.

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\* Birds of Long Island, p. 337.

6. **Crymophilus fulicarius.** RED PHALAROPE.—Mr. G. E. Payne, of New York City, while bay-bird shooting at Shinnecock Bay, September 26, 1885, procured a female of this species in full winter plumage. He presented the specimen to me, in the flesh, and gave me the following note of the capture. "My gunner, Charles Lane, first observed the bird, and concluded it to be a stranger. It was quietly feeding, and although we were quite close, it did not appear to notice us. It was alone. It was pronounced a Phalarope, but none of the members of the Lane family, who are all gunners, remember having seen one like it before."

6. **Phalaropus lobatus.** NORTHERN PHALAROPE.—The only note of this species made by the writer since his record\* of the unusual flight which took place in May, 1883, is of one which struck Fire Island Light during the night of May 19, 1884. Wind south south-west, fresh. Weather cloudy.

7. **Phalaropus tricolor.** WILSON'S PHALAROPE.—Mr. G. W. Howell, of Atlanticville, Suffolk Co., shot an individual of this species about August 15, 1885. The writer had the pleasure of seeing it while being mounted at the taxidermist's.

8. **Macrorhamphus scolopaceus.** LONG-BILLED DOWITCHER.—I think that on Long Island this wader may be called a regular, but not common, late fall migrant. September 26, 1884, Mr. F. M. Chapman informed me that he procured three while at Shinnecock Bay. Capt. Lane, of the same place, wrote me that his sons shot three October 6, 1885, and on the next day two more. Mr. E. A. Jackson wrote me that he saw, at Atlanticville, a Dowitcher on the 5th of October, and another on the 9th. They were undoubtedly *scolopaceus*, as the common form is never found in this locality so late in the season. October 9, 1885, Mr. W. F. Hendrickson shot one at Long Island City.

9. **Limosa fedoa.** MARBLED GODWIT.—The 'Brown Marlin' of the Long Island gunners is at the best a rare bird, and is looked on as a prize at any time. My experience in bay-bird shooting on the South Shore, dating back as it does for twelve years, is a blank regarding this species. Not only have I never shot one, but I have never been so fortunate as to hear one utter its call note. Giraud says, "Arrives on the shores of Long Island in the month of May: it cannot be said to be an abundant

\* Auk, Vol. I, 1884, p. 33.

species—still, we observe it visits us regularly every spring and autumn.”\* August 12, 1881, one was sent to me from Shinnecock Bay, by Mr. C. E. Perkins, of Hartford, Conn., an enthusiastic sportsman, who spends many weeks every summer on the beaches and bars of that Indian-named bay. In 1883, Mr. Talmadge, another sportsman *habitué* of Shinnecock Bay, informed me that three Marbled Godwits had been shot between September 1 and 8 by the sportsmen and their gunners who were shooting on the bay.

During 1884 I did not record any. During the spring of 1885, none were seen at Shinnecock Bay, my informant being George A. Lane, who, with his brothers, is shooting every day during the season. The summer and autumn of the same year produced four, and possibly five, records as follows: August 25, one was shot by Mr. W. M. Lawrence, a sportsman who was located at Atlanticville, a hamlet near the western end of Shinnecock Bay. August 31, two were seen at the same place by L. E. Howell, a resident gunner. The same day one was seen by Mr. Perkins, some two miles further east. It was in all probability one of the pair seen by Mr. Howell. September 15, Mr. Perkins reports one seen and secured.

II. *Limosa haemastica*. *HUDSONIAN GODWIT*.—The ‘Ring-tailed Marlin’ of the gunners is much more often seen than its congener, contrary to the record left by Giraud, who states, “This bird with us is not as plentiful as the former. A few are shot every season on the shores of Long Island.”† September 12, 1882, I recorded five at Shinnecock Bay, and on October 5, four from near Babylon, Suffolk Co. During 1883, September 1 to 8, Mr. Talmadge sent me records of six seen at Shinnecock Bay. During 1884 Mr. Perkins sent me the record of one shot August 8 at the same place. On the 25th of the same month I received the record of one shot at South Oyster Bay, Queens Co., and on the 29th of August Mr. N. T. Lawrence furnished me with the record of two which were seen at Rockaway, Queens Co., one of which was secured. Mr Talmadge shot two at Shinnecock Bay; the first September 19, the second on the 24th. During the spring of 1885, George A. Lane notes their entire absence in his locality. The first record

\* Birds of Long Island, p. 260.

† *Ibid.*, p. 261.

of the fall migration was by Lane, who saw two August 26. Mr. Perkins shot two between September 7 and 12. Subsequently five more were shot on various points and bars on Shinnecock Bay, the latest record being one secured October 9, by Mr. E. A. Jackson, a gunner resident at Atlanticville.

12. *Vanellus vanellus*. LAPWING.—Early in December, 1884, I heard a rumor that a strange bird had been shot on Long Island. After some extended inquiry I traced it to the possession of Mr. C. H. Lott. In reply to a communication on the subject, I received the following: "Merrick, L. I., December 18, 1884. The birds to which you refer (European Lapwings) were seen here in the month of December, a day or two after Christmas of last year, 1883. It was just after the severe northeast snow storm that we had at that time. One was shot and preserved by my son, C. H. Lott, Jr. The mate remained about the place for two or three weeks after and then disappeared. In the meantime it had been shot at several times, but was not captured, so far as I know. It seemed to get very wild after its mate was shot." Having ascertained from Mr. Lott the name of the taxidermist who mounted the bird, I wrote asking its condition when it was brought to her. Her husband replied as follows: "The bird you have reference to was not a bird that had been caged. It was a wild bird." January 1, 1886, I visited Mr. Lott at his residence and made a careful examination of the bird. I could find no evidence that it ever was other than a wild bird. Its plumage and legs were clean and in no degree cage-worn or stained. I also visited the taxidermist, who was positive that it had never been caged. From all the circumstances in the case I can but conclude that the record is a good one, and I therefore have decided to make it public, and claim it not only as the first record for this species on Long Island, but also on the continent of North America below the 60th parallel of latitude.

13. *Aegialitis wilsonia*. WILSON'S PLOVER.—Since the record I made in 1879\* I have been able to secure only one specimen of this Plover on Long Island. May 16, 1884, Mr. G. A. Lane shot one at Shinnecock Bay, which he sent to me. It was a female and some of the ova were materially increased in size. It was in company with some Turnstones when shot. Nelson Verity, of South Oyster Bay, Queens Co., a professional gun-

\* Bull. Nutt. Orn. Club, Vol. IV, p. 242.

ner, recognized a description of this species and said that he had shot them at long intervals.

14. *Hæmatopus palliatus*. AMERICAN OYSTER-CATCHER.—As long ago as Giraud's time this bird was considered rare, as he says of it, "With us the Oyster-catcher is a rather scarce bird . . . . Its occurrence with us is so seldom that I have not had an opportunity of observing its habits as closely as I should wish."\* It is probably now even more rare than it was then. In the early part of June, 1882, I saw a pair of these birds in the shop of a taxidermist on William St., N. Y. He claimed that they had been shot at or near Greenport, Suffolk Co., a few days previous, although the name of the shooter could not be given. The record although somewhat obscure, is probably correct. During an outing on Long Island in April, 1886, I found in the possession of Mr. Squires of Ponquogue, Suffolk Co., a specimen of this species. It was shot on a salt meadow, near the beach, about March 9, 1880.

15. *Cathartes aura*. TURKEY VULTURE.—Mr. Knoess, of Riverhead, informed me that he mounted a specimen of this Vulture, August 15, 1877, for Mr. James A. Johnston, of Brooklyn. Mr. Benj. B. Johnston, in whose possession the bird now is, informs me that his brother shot the bird "one mile from the village of Greenport, Suffolk Co., on the north road."†

16. *Strix pratincola*. AMERICAN BARN OWL.—Mr. Giraud‡ does not include this Owl in his list of Long Island birds, and Mr. G. N. Lawrence§ simply says, "Barn Owl, rare." An instance of the breeding of this Owl on Long Island has recently been brought to my notice by Mr. Langdon Gibson, of Flushing, Queens Co., as follows: "May 30, 1883, Mr. C. D. Gibson caught four young Barn Owls in the steeple of the Congregational church in Flushing. On his reaching the staging where the young birds were, one of the parent birds, the only one present, flew out of the broken window and escaped. The young birds crowded up into one corner and made a peculiar

\* Birds of Long Island, pp. 222, 223.

† A later Long Island record may be found in Forest and Stream, Aug. 19, 1886, p. 64.

‡ Birds of Long Island, 1844.

§ Catalogue of Birds observed on New York, Long, and Staten Islands, and the adjacent parts of New Jersey. Ann. N. Y. Lyc. Nat. Hist., VIII, p. 281, April, 1866.

hissing sound. The floor on which they were was in a filthy condition, covered with pellets, and dead rats and mice in all stages of decomposition. There was also one young muskrat and some moles. The young Owls appeared to be of different ages, no two being of the same size. They were afterwards confined in a cage near my house, which was about a mile from the church. They kept up such a screaming that the old bird found and afterwards visited them every night at dusk. They were kept caged until early winter when they died, apparently without cause."

17. *Nyctala acadica*. SAW-WHET OWL.—Giraud says of this Owl, "With us it is quite rare."\* My notes as given below would indicate, on the contrary, that it is common, at least in the winter months. December 6, 1884, Capt. Hubbard, of the Fire Island Life Saving Station, shot one on the beach, which he sent to me. One was sent to me from Merrick, December 31, 1884. Mr. W. F. Hendrickson, of Long Island City, one of my most earnest and reliable observers, writes me regarding this species as follows: "November 15, 1884, saw one with a gunner who had killed it near Train's Meadows, Queens Co. December 27, my brother found one, a female, at Ravenswood, Queens Co., which had been frozen. November 4, a friend shot one at Creedmore, Queens Co., and I saw one in his shop which he was mounting for a customer. It was also killed on the island. March 30, 1885, I found the feathers of one scattered about as though it had been killed and eaten by a cat or Hawk." Mr. Franklin, of Port Washington, Queens Co., informed me that on February 28, 1885, a small Owl had flown or fallen down the chimney flue into his library. He caught it alive and afterward liberated it. From his description of the bird it was undoubtedly this species.

18. *Calcarius lapponicus*. LAPLAND LONGSPUR.—This boreal species, usually so rare, seems to have been in a roving mood during the winter of 1884-85. At Far Rockaway Beach, Queens Co., February 7, 1885, while on a collecting trip with Dr. A. K. Fisher, one was secured by him as it was flushed from the short beach grass where we were looking for Ipswich Sparrows. February 26, 1885, several flocks of from six to ten individuals were found by Mr. W. F. Hendrickson on some filled-in

\* Birds of Long Island, p. 23.

roads, running through what was formerly a swamp, in the upper part of Long Island City, Queens Co. They were in company with a few Snowflakes and Horned Larks. Two days later he saw a few scattered Longspurs and one mixed flock of Longspurs, Horned Larks, and a few Snowflakes. This flock, he says, contained about twenty or twenty-five Longspurs. They were very wild and difficult of approach. Four were secured and preserved. All were males and were in good condition. This Arctic wave must have been receding, as no more were seen, although Mr Hendrickson carefully looked for them in the same and other localities many times subsequently. As from a receding wave one often sees a fleck of foam left lightly resting on the beach, so must this bird-wave have left one of its number on the Hempstead Plains (Queens Co.), where it was found and shot by Mr. A. H. Hawley, April 18, 1885.

19. *Ammodramus princeps*. IPSWICH SPARROW.—On Long Island I think this species is a regular winter resident on the barren sand beaches of the South Shore. It can undoubtedly be found from the middle of October till the first of April. Although this bird is a winter resident in numbers, yet some must migrate further south, as Mr. J. Dwight, Jr., found them at Rehoboth Beach, Delaware, November 22, 1884 (Auk, Vol. II, p. 105). It may be that the 120 miles of coast line of Long Island is their southern winter range, below which, however, a few may straggle. In addition to the Long Island records already published I will add the following, which will extend the time of their residence on the island materially. Charles Carter, of Shinnecock Bay, wrote me October 20, 1884, that he had seen 'but one *princeps* this fall; that on October 12. There can be no doubt of Mr. Carter's identification of the bird, as he is very familiar with the species, having shot and sent to me a large number of them from time to time. He is a keen and reliable observer, and I am indebted to him for many valuable notes and rare birds. Very early in November he commenced to send me specimens of this species and continued to do so at intervals all winter. February 7, 1885, Dr. A. K. Fisher and myself secured eleven during a walk of two miles on the beach at Rockaway, and saw at least three individuals which we did not get. On the same ground, the 23d of the same month, Mr. L. S. Foster and myself shot thirteen and saw probably as many more. Of these the

genital organs of some of the males were quite sensibly increased in size, and of some received March 19 they were quite markedly so. Some of these last specimens were in the midst of the moult. April 1, I received from Mr. Carter two specimens, the stomachs of which were filled with small black insects. This was the first instance where I had found anything but vegetable matter used for food. All of the stomachs examined before contained, so far as I could determine, seeds. Mr. N. T. Lawrence kindly permits me to record one shot at Far Rockaway Beach, April 3, 1885. He thinks he saw another the same day. Hereafter this species will have to be relegated to the commonplace, and not worthy of special record on Long Island.

20. *Spizella pusilla*. FIELD SPARROW.—Mr. S. B. Strong, of Setauket, Suffolk Co., N. Y., brought me a fine specimen, which he had shot on his farm January 31, 1885. It is worthy of record, as its stay must have been voluntary, there being no evidence on the bird itself to lead me to believe that it had been hurt or disabled in any manner.

21. *Piranga rubra*. SUMMER TANAGER.—While at Sag Harbor recently I found among some mounted birds in the shop of Lucas & Buck, an adult specimen of this species which was shot some time in May, 1885, near the village of Bridghampton. Mr. Ivan C. Byram, of Sag Harbor, wrote me that on April 7, 1886, a friend shot a strange bird. It was unfortunately eaten by a cat, which did not know its value as a specimen. From the description given of the bird I have no doubt but that it was correctly identified by Mr. Byram as a Summer Tanager. Mr. Albert Lott, of Merrick, Queens Co., sent one to me for identification. He wrote that it was shot by a neighbor, May 14, 1886. At the time it was killed it was near his hives catching the bees. It did not eat any portion of them except the head. It had been about the place for three or four days.

22. *Thryothorus ludovicianus*. CAROLINA WREN.—Giraud says of this bird: "Occasionally during the summer months, this large and musical Wren is seen on Long Island."\* The later published records for the country lying east and north of Long Island are for the summer months, with the notable exceptions of the record made by Mr. H. A. Purdie†, of Boston,

\* Birds of Long Island, p. 75.

† Bull. Nutt. Orn. Club, Vol. IV, p. 61.

Mass., of one taken at Saybrook, Conn., November 25, 1878, and by Mr. John H. Sage,\* of one taken at Portland, Conn., March 2, 1883. The November specimen was undoubtedly a bird that had spent the summer in the locality where it was secured, and the March specimen may possibly have braved the rigors of a New England winter. It undoubtedly did, as I am now able to present a record of one taken in January, thus confirming that supposition, and showing that although they, as a family, prefer the more genial climate of the Southern States, yet an individual of unusual hardiness is sometimes seen. Mr. John D. Hicks, of Old Westbury, L. I., was attracted, January 30, 1885, by a loud call-note, which resembled, "as near as I can produce it, *kach*," and proceeded from a tangled and swampy thicket near his lumber yard at Roslyn, L. I. Proceeding to the place whence the sound issued, he saw the bird on a low willow tree, giving utterance to its peculiar note and accompanying each one with a Wren-like motion. It gave no song whatever, was sprightly, and in good condition, and was busily occupied in looking for food. Not having a gun with him at the time he was unable to secure it, but on the following day (January 31) he found it in a swamp not more than five hundred feet from where it was seen the day before. On both occasions it was in company with a mixed flock of Tree and White-throated Sparrows. The swamp in which it was found is full of springs that very rarely freeze.

23. *Turdus aliciae bicknelli*. BICKNELL'S THRUSH.—With a number of birds which were sent to me, that had been killed by striking the Great West Bay Light (Shinnecock Bay), Long Island, on the night of October 1, 1881, were four Thrushes, which I labelled *aliciae*. Quite recently I submitted them to Mr. Bicknell, who pronounced two of them to be undoubted examples of the new variety *bicknelli*. I have therefore the pleasure of adding another bird to the known avi-fauna of Long Island.

24. *Turdus aonalaschkæ pallasii*. HERMIT THRUSH.—A case of the probable breeding of this Thrush on Long Island has come to my notice through the kindness of Mr. Charles Earle, of New York City. On the 23d of September, 1878, near Lake Ronkonkoma, he secured a Thrush of this species in the nest-

\* Bull. Nutt. Orn. Club, Vol. VIII, p. 120.

ing plumage, and on the next or the following day another in the same plumage. Both specimens show conclusively that they are very young birds, each being in the undeveloped feather-stage peculiar to altricial birds just leaving the nest. As both specimens were taken in the same neighborhood, it is presumable that they were nest companions, although one is some days more developed than the other. I have shown them to Mr. J. A. Allen, who informs me that he knows of no instance of such immature birds migrating.

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## THE AFFINITIES OF CHÆTURA.

BY FREDERIC A. LUCAS.

FOR a long time the Swifts have been debarred from the society of passerine birds and made to associate with those contained in that avian waste basket, termed the order Picariæ. Of late, however, several ornithologists, notably Mr. Sharpe and Dr. Parker, have advanced a plea for their reinstatement in the order Passeres. Latest of these is Dr. Shufeldt who reaches the conclusion\* that "the Swifts are essentially modified Swallows, and, as the family Cypselidæ, they belong, in the order Passeres, next to that group."

Notwithstanding the evident care of Dr. Shufeldt's work I must confess myself as unconvinced by the evidence he brings forward and will briefly review the case of *Chætura* as a plea for the continued separation of Swifts and Swallows and the retention of the first named family near the Hummingbirds. I am well aware of the risk I run in opposing my own slight knowledge of the subject to the results of Dr. Shufeldt's more extended studies, and it is with still greater diffidence that I venture to disagree with so distinguished a morphologist as Dr. Parker. Nevertheless, until still more evidence to the contrary is adduced, I will hold fast to Huxley's union of Hummingbirds and Swifts. As for the Caprimulgidæ, there are few, I think, who will object to their

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\* Contribution to the Comparative Osteology of the Trochilidæ, Caprimulgidæ, and Cypselidæ. Proc. Zoöl. Soc. London, Dec. 1 1885.

being placed in an order by themselves. They are a most attractive group of birds for study, and all that I have examined or seen figured offer good cranial generic characters, which is more than can be said for most birds. In the ensuing comparisons *Trochilus* may be construed as *T. colubris*, while *Chelidon* stands for *C. erythrogaster*, this bird having been chosen simply because its name is a little less formidable than that of most Swallows, and not from any peculiarity of its skeleton.

Before taking up the more salient structural characters, it may be well to say that, viewed in profile, the skull of *Chætura* is very suggestive of *Chordeiles*, while that of *Chelidon* unmistakably resembles that of a Flycatcher. The sphenoidal rostrum of *Chætura* is broad, the palatines are separated from one another, and the pterygoids are in close proximity to the basi-temporal region,\* all characters wherein *Chætura* agrees with *Trochilus* and differs from *Chelidon*. This bird has the rostrum narrow, the palatines applied to each other posteriorly, and the pterygoids standing well out from the basi-temporal region, as in the higher Passerines. In *Chætura* the curiously expanded end of the vomer abuts on the maxillo-palatines, with which in young birds it is intimately connected. While this is wholly unlike the sharp-pointed, anteriorly free, vomer of *Trochilus*, and more nearly resembles the typically passerine vomer of *Chelidon*, yet the vomer of *Chelidon* is quite free from the maxillo-palatines, although it overlies them for its entire length. Now, among the Goatsuckers, *Chordeiles* has a slender, pointed vomer, which at first rests upon and later in life coalesces with the united maxillo-palatines, while in *Antrostomus*, and to a less extent in *Nyctidromus*, the vomer is broad and at its free extremity articulates with the maxillo-palatines. Assuredly there is an interesting suggestion of relationship between *Chætura* and the Goatsuckers, and a study of the embryology of the former bird would undoubtedly yield good results. The maxillo-palatines of *Antrostomus* terminate in recurved points which bear a certain resemblance to the slender, curved maxillo-palatines of *Chætura*. In *Chelidon* these bones are expanded at their free extremities, these expansions having the

\*Perhaps I over estimate the importance of this last character, but it is a pronounced feature of many 'Picariae,' notably of the Woodpeckers and Goatsuckers, less so of the Cuckoos.

same peculiar and characteristic shape in the six species of Swallows at my disposal.\*

The maxillo-palatines of *Trochilus* are apparently not prolonged, but it would be unsafe to affirm too positively that such is the case before examining some large species, since, even if present, they would be filamentous in character.

I will touch but briefly on the vertebral column and ribs, as both time and space are wanting for a careful analysis of the characters contained therein. The following table shows the number of vertebræ and ribs in *Trochilus*, *Chætura*, and *Chelidon*, the two *Limosæ* being added to show of how little value is the mere number of vertebræ. *L. rufa* is quoted from Eyton, and while his term 'sacral' includes some presacrals and some caudals, neither the total number of vertebræ nor the proportion of true dorsals and cervicals is thereby affected.

	<i>Trochilus</i> .	<i>Chætura</i> .	<i>Chelidon</i> .	<i>Limosa fedoa</i> .	<i>Limosa rufa</i> .
Cervicals.....	13	14	13	15	12
Presacrals.....	8	7	8	11	7
Sacrals.....	4	3	3	4	15
Caudals, including pygostyle.....	9	12	12	12	6
Total .....	34	36	36	42	40
Cervical ribs .....	1	2	1	2	1
True ribs.....	8	7	6	8	7

The term sacral is here applied to the *true* sacrals as defined by Huxley and Parker.

According to the above table, *T. colubris* possesses one more vertebra than does *T. alexandri*, while the arrangement of ribs is also different. At first sight the last, free rib seems to be without a corresponding vertebra, but careful examination shows that the last apparent presacral vertebra is really composed of two. Very fortunately there was one specimen of *Trochilus* among my material in which the vertebræ could be clearly counted. Very significant is the fact that the last rib of *Chætura*, like that of *Trochilus*, is imperfect, only the lower moiety with its attached sternal rib being present. A similar condition is found in the Loons, but not that I am aware of in any passerine bird. *Cypselus* is the same as *Chætura* and I venture the prediction that careful dissection will reveal this rib in *Panyptila*.

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\*In Dr. Shufeldt's figures of *Panyptila* and *Tachycineta* the maxillo-palatines are imperfect.

The free caudals of *Trochilus* and *Chætura* agree in having long, slender, recurved transverse processes, in which particular they resemble the Goatsuckers, and contrast with the Swallows, whose short transverse processes are like those of other Passeres.

A character of great importance is found in the manner in which the ribs join the sternum. In *Trochilus* and *Chætura* they articulate with the body of the sternum, while in *Chelidon*, as in all Passeres I have examined, the ribs are attached only to the costal process. In this particular, as in many others, the Goatsuckers more nearly resemble the passerine birds than does *Chætura*. To say nothing of the great depth of keel\* possessed by both *Trochilus* and *Chætura*, their sterna agree in having small costal processes and un-notched, rounded posterior borders. In *Chætura*, as Dr. Shufeldt has noticed in *Panyptila*, there are numerous vacuities in the body of the sternum and the upper part of the keel. This is but an exaggeration of the structure found in *Trochilus*, whose sternum is honey-combed by irregular depressions which in many places lack but little of completely perforating the walls of the sternum.

The manubrium is entirely wanting in *Trochilus* and very small in *Chætura*.

In all these particulars *Chætura* and *Trochilus* contrast strongly with *Chelidon*, which has the large Y-shaped manubrium, prominent costal processes, and deeply bi-notched sternum so characteristic of the Passerines.† The sterna of *Chordeiles* and

\* Speaking of *Panyptila*, Dr. Shufeldt says (p. 907) "the keel to the sternum is not so deep in comparison with the remainder of the bone as we often find it among Passeres, and in this particular it is not to be mentioned with the extraordinary carinal development of *Trochilus*."

Dr. Shufeldt's eye has certainly deceived him here, for a pair of dividers applied to his figures shows that the proportion of length to depth is very nearly the same in both. As to the matter of carinal development among the Passeres, I must confess myself unable to name one which at all equals *Chætura* or *Panyptila*. At the same time it must be borne in mind that these proportions do not show the true state of the case, since *Trochilus* and *Chætura* have sterna not only unusually deep but unusually long. The relation of depth to length is much greater in the sternum of *Chordeiles* than in *Trochilus*, but the breast bone of *Chordeiles* is a short one. In *Chætura* and *Campylorhynchus* the proportion of length to depth is identical.

† Among birds the characters afforded by the sternum are so important that I must confess myself a little surprised that Dr. Shufeldt should so readily reject them (see p. 914), when only two pages before he lays stress on the development of the phalanges. The notched or un-notched condition of the xiphoid border is in no way due to physiological adaptation, while the modifications of the phalanges are very largely so caused. Some of the parrots fly well, some very poorly, none at all compare with *Trochilus* or *Chætura*. And yet all (*fide* Huxley) have the sternum un-notched.

*Trogon* resemble each other closely and are intermediate in form between those just described. In these birds the manubrium is absent, the costal processes large, and the xiphoid border marked with two rounded excavations.

The coracoids of both *Chætura* and *Trochilus* are short and stout, and in both birds these bones, instead of resting in the usual coracoid groove, articulate with a raised oval facet, forming a shallow ball and socket joint. While there is as wide a difference between the coracoids of *Chætura* and *Trochilus* as Dr. Shufeldt points out between *Trochilus* and *Panyptila*, this discrepancy is almost entirely due to the unusual development of the inner edge of the bone in *Trochilus*. This is so great as to make the distal end of the coracoid as wide as the proximal, while the prolongation of the clavicular process and its fusion with the scapular process forms a tendinal *foramen*. There is nothing of this in *Chætura*, but there is a good sized foramen corresponding to the lower foramen of *Trochilus*, and the coracoid as a whole is entirely different from the long, slender, imperforate bone we find in *Chelidon* and other typical Passerines. Here, again, *Chordeiles* stands intermediate between *Chætura* and *Chelidon*, the coracoid being moderately stout, but long and imperforate. The furculum of *Trochilus* is widely U-shaped, has an almost rudimentary hypocleidium, is devoid of an anterior process at its articulation with the coracoid, and is so short as to reach but half way to the anterior angle of the sternal keel.\*

The furculum of *Chætura* agrees with that of *Trochilus* in all respects save width, and even here it greatly exceeds the corresponding bone of *Chelidon*. The furculum of *Chelidon*, moreover, reaches from coracoid to angle of sternum, has clavicular ends anteriorly expanded, and a large backwardly directed hypocleidium.

The point of the scapula has a downward droop in *Trochilus* that is wanting in that of *Chætura*, but in the nestling of this latter bird the cartilaginous supra-scapula is bent downward at an angle even greater than in *Trochilus*. The curious shape of the humerus in *Trochilus* and *Chætura* is due to the total sup-

\* This shortness is not only *apparent* but *real*, and is not due to the depth of keel. Owing to the shortness of the coracoids the furculum of *Chelidon* will reach from scapula to angle of keel in *Chætura*, and that of *Vireo* will do the same for *Campylopterus*.

pression of the shaft, the elongation of the distal head, and the exaggeration of all ridges.\* The shortness of the humerus in *Trochilus* is remarkable, but in this particular it is equalled by *Chætura*, while the strange development of the radial ridge in this latter bird is, so far as I am aware, peculiar to the Swifts. The humerus of *Chelidon* is merely that of any typical Passerine a little shortened. *Os humero-scapulare* is present in *Chelidon*, but I have been unable to find it either in *Chætura* or *Trochilus*. This, however, does not signify much, for this little bone is found in such a distant relative of the Passeres as *Steatornis*. *Trochilus* has two anconeal sesamoids; *Chætura*, *Chelidon*, and many Passerines have but one.†

The curious, straight antebrachium of *Chætura* is apparently another peculiarity of the Swifts, and bears no resemblance whatever to the forearm of either *Trochilus*, *Chelidon*, or *Chordeiles*. The radius and ulna of *Trochilus* are strongly bowed outward from one another, an arrangement which probably has some direct relation to the rapidity with which the wing is moved, for the same thing occurs in *Tinamus*, and to a less degree in the Gallinæ, and these birds are noted for their rapid wing beats. The principal bone of the carpus, the ulnare, is very similar in both *Trochilus* and *Chætura*, its inner side being prolonged into a process which overlaps, or underlies the metacarpus. The ulnare of *Chordeiles* resembles that of *Chætura*, but the ulnare of *Chelidon* has the roughly trihedral shape customary among the Passeres. The second metacarpal of *Chætura* is round, as in *Trochilus* and *Chordeiles*, and is very different from the broad, flat metacarpal of *Chelidon*, *Ampelis*, and other passerine birds. Its length in comparison with the ulna is the same in *Chætura* and *Trochilus*.

The first phalanx of the second digit is proportionally much

\* A word in regard to variation. Apparently the smaller the bird the more exaggerated the characters of its bones. Thus little *Selasphorus* with its narrow wings has in proportion to its size a more widely forked furculum, a stouter and more rugose humerus, and deeper sternal keel than its larger relative *Campylopterus*.

† The majority of passerine birds dissected by me have an anconeal sesamoid, one on the ulnar side of the carpus, and one on the anterior edge of the wing at the base of the first phalanx of the second digit. I am inclined to believe that these sesamoids are seldom if ever lacking in Passeres except when lost in preparation, as may readily happen.

shorter in *Chætura* than in *Trochilus*. In shape it is intermediate between *Trochilus* and *Chordeiles*, *Trochilus* being intermediate between *Chordeiles* and *Chelidon*. The first phalanx of the third digit of *Trochilus*, although long and slender, does not begin to equal in these respects the corresponding phalanx of *Aptenodytes*, and is approximated even by *Chordeiles*, so that mere length can hardly be adjudged a good distinctive character. In the manner in which the second and third digits articulate with the metacarpus *Trochilus*, *Chætura* and *Chordeiles* agree very well among themselves, showing little of the 'breaking joints' found in *Chelidon* and other Passerines. In the proportional length of the outer phalanx of the second digit *Chætura* falls a little short of *Trochilus*, although vastly exceeding *Chelidon*.

The most remarkable feature in the pelvis of *Trochilus* is the great length of the slender, incurved pubes, which almost touch one another. This is also the case with *Chætura*, although to a much less degree. In *Chelidon*, on the contrary, the pubes are of but moderate length and but slightly incurved, so that they are very far removed from one another at their extremities, as in the higher Passerines. *Chordeiles*, in this as in other particulars, lies between *Chelidon* and *Chætura*.

A slighter character is found in the varying development of the ilio-neural grooves. These are practically obsolete in *Trochilus* and nearly so in *Chætura*, shallow in *Chordeiles*, and deeply excavated in *Chelidon*, *Ampelis*, *Merula*, and others. The region immediately over the true sacrals is strongly tumose in both *Trochilus* and *Chætura*, but not at all in *Chelidon*, or even *Chordeiles*.

Passing by the femora, which present few salient characters, we find that *Trochilus* and *Chætura* have the *cnemial* ridges of the tibia but poorly defined, while in *Chelidon* they stand forth as boldly as in *Merula*, *Chordeiles* again holding a median position. In *Trochilus* the fibula is one-fourth the length of the tibia, in *Chætura* less than one third, in *Chelidon* over one-half.

Both *Trochilus* and *Chætura* have a deep groove on the front of the 'tarsus,' at the lower end of which is a comparatively large foramen. Not only *Chelidon* but *Chordeiles* also has the shallow tarsal groove and minute perforation of the higher Passerines. *Trochilus* is peculiar in having a deep notch or emargination on the inner side of the 'tarsus' near its proximal extremity.

*Trochilus*, *Chætura*, and *Chelidon* all agree in having the penultimate phalanges of the foot much the longest of the series, *Chætura* standing first in the list. In this respect the three disagree with *Chordeiles*, in which the phalanges are inclined to be sub-equal. Finally, both *Trochilus* and *Chætura* have the three anterior digits of the foot somewhat equal in length, while *Chelidon* has the middle digit much longer than the others, and *Chordeiles* exaggerates the condition existing in *Chelidon*.

In thus reviewing the affinities of *Chætura*, I am fully aware that my comparisons have not been so extended as could be wished, but to have done the subject justice would have required an amount of time and material that unfortunately do not lie at my disposal. As Dr. Parker well says, "the structures of the skull and face govern the entire body," yet where these are divided in their allegiance it is surely allowable to fall back on other characters. Now, if I have read the skull of *Chætura* aright, it has affinities not only with the Passeres but with the Hummingbirds and Goatsuckers.\*

Such being the case the remaining portions of the skeleton would seem unmistakably to point to the relationship of *Chætura* with *Trochilus*, while between these birds and the Passeres stand the Goatsuckers.

I am indebted to my friend, Mr. L. M. McCormick, for his kindness in supplying me with the specimens of *Trochilus*, *Chætura*, and Swallows on which this article has been mainly based, and to the National Museum for the use of the other material.

[Since this paper has been in the printer's hands Mr. J. W. Scollick has furnished me with a specimen of *Cotile riparia*, thus enabling me to examine all the North American Swallows. Dr. W. K. Parker has most kindly sent me *Cypselus apus*, and although I have not as yet had time to fully prepare the skeleton and compare it carefully with *Chætura* yet it promises to show no marked differences from that bird except, of course, in the numbering of the phalanges.]

\* In order to be free from preconceived ideas Dr. Parker's matchless treatise on the Skull of *Ægithognathous* Birds was not consulted until this paper was finished. It is now a source of great satisfaction to me to find that in this, as in other places, I have followed in the footsteps of so trustworthy a guide.

## DESCRIPTION OF A NEW JAY FROM CALIFORNIA.

BY H. W. HENSHAW.

*Aphelocoma insularis*, sp. nov.

General color above, including surface of wings and tail, dark azure blue, deepest on head.

Back deep sepia brown. Feathers from just anterior to eye to the occiput tipped with white, forming a streaked line. Sides of head, extending well down on neck and breast, dark azure blue. A spot anterior and posterior to eye, including lores and ear-coverts, black.

Feathers of throat and breast ashy white edged with blue. Posteriorly the underparts dull white. Crissum and under tail-coverts blue.

HAB. Santa Cruz Island, California.

## MEASUREMENTS.

	Wing.	Tail.	Bill.	Tarsus.
♂ ad.....	5.30	6 —	1.30	1.85
♀ ad.....	5.40	6.28	1.20	1.79
— ad.....	5.40	6.10	1.17	1.65

The island to which the above species is confined, so far as known at present, is the innermost of the Santa Barbara Group, and is distant from the California coast about twenty miles. While on a short visit to the island in June, 1875, I collected three specimens of the bird in question which, after considerable hesitation, I decided to call *californica*, though they differed considerably from the few specimens of that bird then at hand. Since then the number of specimens of *californica* in the National Museum has so materially increased that nearly every portion of its range on the west coast, from Cape St. Lucas to Oregon, is represented in the series. Having recently had occasion to examine the entire collection of Jays, Mr. Ridgway has kindly called my attention to the fact that notwithstanding the accession of so much new material the island specimens still remain unique. I therefore hesitate no longer to describe them as representing a new species.

The insular habitat of the bird would seem to preclude the possibility of intergradation with the mainland form, if, indeed, the ample material at hand for comparison did not negative such an assumption.

The origin of the bird can hardly be doubtful. Individuals

doubtless reached the island from the mainland, and being non-migratory their continued residence under new conditions has effected very considerable changes of size and coloration.

The essential differences of the island bird from *californica* are its large size, deeper colors, especially of the brown on back, and the blue under tail-coverts instead of white. With reference to its coloration, it is a curious fact that all the colors are much deeper than of specimens from the northern counties of California and of Oregon where, from the presence of deep forests and a heavy rainfall, the coloration should be darker than anywhere to the southward. Specimens of *californica* from the mainland, both in California and Oregon, appear to be remarkably uniform in coloration. In its blue under tail-coverts *insularis* is like *woodhousei*, but otherwise its resemblance to that form is no closer than to *californica*.

Several other species of land birds were found to inhabit the island, and doubtless there were a considerable number not detected in the very hurried search, especially as but a small portion of the island was visited. Specimens were obtained of *Otocoris alpestris rubea*, *Sturnella magna neglecta*, *Carpodacus frontalis rhodocolpus*, *Melospiza fasciata samuelis*, and *Helminthophila celata lutescens*. None of these, however, so far as the few specimens testify, show noteworthy differences from the respective mainland forms.

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## THE BIRDS OF WESTERN MANITOBA—ADDENDA.

BY ERNEST E. THOMPSON.

[N. B.—Hitherto I have written under the assumed name of "Seton"; henceforth I shall write and be known only by my true name, as above.]

MR. RIDGWAY informs me that in the National Museum at Washington there is a specimen of true *Pediaceetes phasianellus* from Lake Winnipeg. The common Manitoban form is probably *campestris*.

My brother, Dr. A. S. Thompson, has sent me from Carberry, a Great Crested Flycatcher (*Myiarchus crinitus*), thus confirming my aural identification as published. Also a Bluebird (*Sialia sialis*) with nest and eggs.

258. *Sturnella magna*. MEADOW LARK.—Given by Professor Macoun as found at "Grand Valley and north of Lat. 51°."

THE BIRDS OF THE WEST INDIES, INCLUDING  
 THE BAHAMA ISLANDS, THE GREATER AND  
 THE LESSER ANTILLES, EXCEPTING  
 THE ISLANDS OF TOBAGO  
 AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from p. 381.]

FAMILY PSITTACIDÆ.

GENUS *Ara* BRISS.

*Ara* BRISSON, Orn. 1760.

*Ara tricolor* (BECHST.).

*Psittacus tricolor* BECHST. Kurze Ueb. p. 64, pl. 1 (1811).

*Macrocercus tricolor* VIEILL. Nouv. Dict. p. 262.—LESS. Traité d'Orn. p. 186 (1831).—CAB. J. f. O. 1856, p. 105.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 297 (1866); ib. J. f. O. 1874, p. 163.

*Sittace tricolor* WAGL. Mon. Psitt. p. 669 (1832).—FINSCH, Die Papag. Mon. Bearb. I, p. 409 (1867).

*Ara tricolor* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 161 (1840).—GRAY, Gen. Bds. II, No. 5 (1844-49).—GOSSE, Bds. Jam. p. 260 (1847).—ALBRECHT, J. f. O. 1862, p. 202.—SCL. & SALV. Nom. Avium Neotr. p. 111 (1873).—A. & E. NEWTON, Handb. Jamaica p. 110 (1881).—CORY, List Bds. W. I. p. 20 (1885).

*Macrocercus makavouanna* STEPH. Gen. Zool. XIV, p. 112.

*Macrocercus (Aracanga) tricolor* LEMB. Aves Cuba, p. 132 (1850).—BP Rev. Mag. Zool. 1854, p. 149.

*Arara tricolor* BP. Naum. 1856.—SCHLEG. Mus. Pays-Bas, Psitt. p. 4 (1864).

*Primolius tricolor* GRAY, Handl. Bds. II, p. 145 (1870).

SP. CHAR. *Male*:—Forehead red, becoming yellowish red on the top of the head, and shading into bright yellow on the nape; feathers of the upper back cinnamon red, edged with greenish; lesser wing-coverts brown, with reddish edgings; entire underparts scarlet red, showing a tinge of orange on the cheeks and throat, some of the feathers showing yellow on the belly; primaries and secondaries showing bright blue on the upper surface; under surface of primaries pale brownish red; upper surface of tail-feathers showing the feathers cinnamon red, shading into bright blue on the tips, some feathers showing more

blue than cinnamon, while in others the cinnamon predominates; under surface of tail-feathers cinnamon red, showing bright orange when held in the light; crissum pale blue; bare skin around the eye probably dull white; bill dark brown, pale at the tip; legs and feet brownish; iris pale yellow.

The sexes are probably similar.

Length (skin), including tail, about 18; wing, 11; tail, 10; tarsus .85; bill, curve, 2, straight line from base to tip, 1.75.

HABITAT. Cuba. Jamaica.

It is not impossible that *Ara militaris* may have occurred in Cuba and Jamaica, but it is improbable. The bird recorded as such was perhaps *A. tricolor* wrongly identified; Gosse remarks, however, that every description he received of the bird agreed with that of *A. militaris*, "the Great Green Macaw of Mexico." Dr. Gundlach writes me he believes *A. tricolor* is still to be found in the swamps of Cuba, and that years ago he killed a number of birds of this species in the swamps of southern Cuba. He has several fine specimens in his collection.

#### GENUS *Conurus* KUHL.

*Conurus* KUHL, Conspl. Psitt. 4, 1830.

##### *Conurus euops* (WAGL.).

*Sittace euops* WAGL. Mon. Psitt. p. 638 (1832).

*Psittacus euops* HALM. Orn. Atl. Pap. p. 95 (1836).

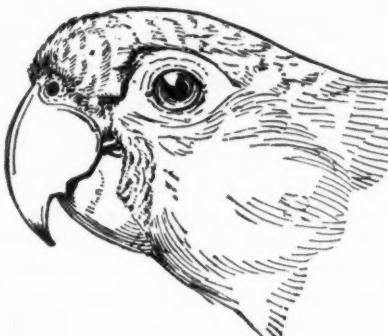
*Conurus guianensis* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 162 (1840).—LEMB. Aves Cuba, p. 132 (1850).

*Conurus euops* GRAY, Gen. Bds. II, No. 26 (1844-49).—FINSCH, Die Papag. Mon. Bearb. I, p. 474 (1867).—SCL. & SALV. Nom. Avium Neotr. p. 112 (1873).—CORY, List Bds. W. I. p. 20 (1885).

*Eoopsitta euops* BP. Rev. Mag. Zool. 1854, p. 151.

*Psittacara euops* SOUANCE, Rev. Mag. Zool. 1856, p. 69.

*Conurus guyanensis* CAB. J. f.O. 1856, p. 106.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).



*Conurus evops* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 297 (1866); *ib.* J. f. O. 1874, p. 164; *ib.* Anal. Soc. Esp. Hist. Nat. VIII, p. 229 (1878).

*Evopsitta guyanensis* GRAY, Handl. Bds. II, 146 (1870).

**Sp. CHAR. Male:**—General plumage green, dark above, light beneath; the head dotted here and there with small touches of bright red; this marking does not seem at all constant; a broad patch of vermillion red on the under wing-coverts, extending upon the carpus; shafts of wing and tail-feathers brownish black; bare skin around the eye bluish white.

The sexes are apparently similar.

Length (skin), 9.75; wing, 5.50; tail, 5.50; tarsus, .50.

**HABITAT.** Cuba.

### Conurus xantholæmus SCL.

*Conurus xantholæmus* SCL. Ann. Nat. Hist. 3d ser. IV, p. 225; *ib.* Cat. Am. Bds. p. 348 (1862).—A. & E. NEWTON, Ibis, 1859, p. 374.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 377.—TAYLOR, Ibis, 1864, p. 171.—GRAY, Handl. Bds. II, p. 148 (1870).—CAB. J. f. O. 1879, p. 222.—CORY, List Bds. W. I. p. 20 (1885).

*Conurus xanthogenius* SCL. & SALV. Nom. Avium Neotr. p. 112 (1873).

**Sp. CHAR. Male:**—Forehead, sides of the head and chin bright orange; rest of upper surface bright green; underparts yellowish green, marked with orange on the belly and abdomen; primaries blue, showing green on the outer webs, and having the shafts and tips brown; upper surface of tail green; under surface of tail yellow; bill dark.

The sexes are similar.

Length (skin), 9.50; wing, 6; tail, 5; tarsus, .35; bill, .90.

**HABITAT.** St. Thomas and St. Croix.

### Conurus nanus (VIG.).

*Psittacara nana* VIG. Zool. Journ. V, p. 273 (1830).—LEAR, Parr. pl. 12. —WAGL. Mon. Psitt. p. 640 (1832).

*Conurus nanus* GRAY, Gen. Bds. II, No. 32 (1844-49).—SOUANCE, Icon. Perr. pl. 12, fig. 1.—ALBRECHT, J. f. O. 1862, p. 203.—SCL. Cat. Am. Bds. p. 349 (1862).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 284.—FINSCH, Die Papag. Mon. Bearb. I, p. 520 (1867).—GRAY, Handl. Bds. II, p. 148 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 112 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 20 (1885).

*Conurus flaviventer* GOSSE, Bds. Jam. p. 263 (1847).

SP. CHAR. *Male*:—Entire upper plumage bright green; underparts showing a brownish tinge on the throat and breast; dull olive on the belly; upper surface of tail bright green shading into blue at the tip; under surface of tail yellow; outer webs of primaries green, inner webs blue, becoming brown at the edge; bill pale.

The sexes are apparently similar.

Length (skin), 10; wing, 5.25; tail, 5; bill, 1.

HABITAT. Jamaica.

### *Conurus chloropterus* (SOUANCÉ).

*Psittacara chloroptera* SOUANCÉ, Rev. Mag. Zool. 1856, p. 59.

*Conurus chloropterus* SCL. P. Z. S. 1857, p. 234.—FINSCH, Die Papag. Mon. Bearb. I, p. 469 (1867).—CORY, Bds. Haiti & San Domingo, p. 113 (1855); *ib.* List Bds. W. I. p. 20 (1885).

*Psittacus (Conurus) chloropterus* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).

SP. CHAR. *Male*:—General plumage yellowish green, darkest on the tail and wings; under surface of wings and tail greenish yellow; under wing-coverts bright scarlet, showing upon the edge of the wing; bill pale; feet dark brown; some specimens occasionally show feathers tipped with red upon the back and wings, but generally so slightly as to be hardly noticeable. Immature birds often show yellow on the primaries.

The sexes are similar.

Length, 12; wing, 7; tail, 6; tarsus, .50.

HABITAT. San Domingo.

### *Conurus gundlachi* CABAN.

? *Conurus evops* GUNDL. J. f. O. 1878, p. 184.

*Conurus gundlachi* CAB. Orn. Centralb. VI, p. 1 (1881); *ib.* J. f. O. 1882, p. 119.—GUNDL. J. f. O. 1881, p. 401.

SP. CHAR.—“This species is distinguished from *Conurus euops* in having the wings nearly 3 ctm. longer, and by the extension of the red coloring of the lower wing-coverts, also on the under row of large wing-coverts, which in *euops* are yellowish olive as in most of the species of *Conurus*.” (CABANIS, l. c., orig. descr., translated.)

HABITAT. Mona, near Porto Rico.

I have never seen this species, and the descriptions of it are somewhat meagre. Dr. Gundlach says that he was told the birds came from San Domingo to the Island of Mona, but adds that this is only a supposition.

GENUS **Chrysotis** SWAINS.*Chrysotis* "SWAINSON, Zool. Journ. 1837."**Chrysotis sallaei** SCL.*"Psittacus leucocephalus?"* GMEL. Syst. Nat. I, p. 338 (1788)."*Chrysotis sallaei* SCL. P. Z. S. 1857, p. 224; *ib.* Cat. Am. Bds. p. 353 (1862).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—CORY, Bds. Haiti & San Domingo, p. 115 (1885); *ib.* List Bds. W. I. p. 20 (1885).*Amazona sallaei* SCHLEG. Mus. Pays-Bas, Psitt. p. 58 (1864).*Psittacus (Chrysotis) sallaei* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).*Chrysotis ventralis* GRAY, Handl. Bds. II, p. 164 (1870).*Chrysotis sallaei* CORY, Bull. Nutt. Orn. Club, VII, p. 154 (1881).

**SP. CHAR. Male:**—General plumage green; forehead white, extending in front of the eye; top of head blue, narrowly tipped with black; a patch of black on the cheeks; abdomen and basal half of tail-feathers crimson, wanting upon the outer web of the outer tail-feather; thighs pale blue in very adult birds, in most specimens green, the blue being scarcely perceptible; primaries and secondaries dark blue on the outer webs; inner webs dark brown; a small patch of red on the throat, which does not appear to be constant.

The sexes are apparently similar.

Length, 10.50; wing, 8; tail, 4.50; tarsus, .60.

**HABITAT.** Haiti and San Domingo.

**Chrysotis vittata** (BODD.).

*Psittacus vittatus* BODD. Tabl. Pl. d' Aub. p. 49 (1783).—GRAY, Gen. Bds. II, No. 24 (1844-49).—SUNDEV. Oefv. K. Vet. Akad. Förl. 1869, p. 599.

*Psittacus dominicensis* GMEL. Syst. Nat. I, p. 343 (1788).—VIEILL. Enc. Méth. p. 1375.—WAGL. Mon. Psitt. p. 597 (1832).

*Psittacus leucocephalus* KUHL, Conspl. p. 80 (1821).

*Chrysotis dominicensis* BP. Rev. Mag. Zool. 1854, p. 151.

*Chrysotis vittata* SCL. P. Z. S. 1857, p. 224.—GRAY, List Psitt. p. 83 (1859).—FINSCH, Die Papag. Mon. Bearb. II, p. 515 (1867).—GRAY, Handl. Bds. II, p. 165 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—CORY, List Bds. W. I. p. 20 (1885).

*Amazona vittata* SCHLEG. Mus. Pays-Bas, Psitt. p. 58 (1864).

*Chrysotis vittatus* TAYLOR, Ibis, 1864, p. 171.—GUNDL. J. f. O. 1874, p. 312; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 228 (1878).

*Chrysotis* ——BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 256 (1866).

SP. CHAR. *Male*:—A narrow band of red on the forehead; upper plumage green; the feathers of the head and neck edged with dark brown, heaviest on the neck; underparts green, lighter than the back; yellowish green on the belly; the feathers on the breast edged with dull brown; primaries having the outer webs bright blue, lacking on the first.

The sexes are similar.

Length (skin), 10.50; wing, 7; tail, 4; tarsus, .60; bill, 1.35.

HABITAT. Porto Rico.

### *Chrysotis collaria* (LINN.).

*Psittacus collarius* LINN. Syst. Nat. I, p. 149 (1766).—GMEL. Syst. Nat. I, p. 347 (1788).

*Psittacus gutturalis* MÜLL. Syst. Nat. Suppl. p. 78 (1776).

*Psittacus leucocephalus*, var. **B**. LATH. Ind. Orn. p. 118 (1790).—WAGL. Mon. Psitt. p. 600 (1832).

*Psittacus leucocephalus* GRAY, Gen. Bds. II, No. 25 (1844-49).—GOSSE, Bds. Jam. p. 269 (1847).

*Pionus vinaceicollis* LAFR. Rev. Zool. 1846, p. 241.

*Psittacus vinaceicollis* GRAY, Gen. Bds. III, App. p. 20 (1849).

*Chrysotis leucocephala* BP. Naum. 1856, —.

*Chrysotis vinaceicollis* SCL. P. Z. S. 1857, p. 225.

*Chrysotis collaria* SCL. P. Z. S. 1861, p. 79; ib. Cat. Am. Bds. p. 353 (1862).—ALBRECHT, J. f. O. 1862, p. 203.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 284.—FINSCH, Die Papag. Mon. Bearb. II, p. 517 (1868).—GRAY, Handl. Bds. II, p. 164 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 20 (1885).

“*Chrysotis amazonicus*, juv. BL. Cat. Bds. p. 11.”

SP. CHAR. *Male*:—Top of head blue, the feathers indistinctly showing black edges, fading into green on the nape; a narrow line of white on the forehead; the rest of upper surface bright green; throat dull red, some of the feathers narrowly edged with green; cheeks greenish blue; rest of underparts green; tail green, most of the feathers having the basal half of the inner webs dull green, faintly showing on the outer webs, the red entirely wanting on the central feathers.

Length (skin), 11.50; wing 7; tail, 4.50.

HABITAT. Jamaica.

### *Chrysotis leucocephala* (LINN.).

*Psittacus leucocephalus* LINN. Syst. Nat. I, p. 100 (1758).—ALDROV. Orn. I, p. 670.—GMEL. Syst. Nat. I, p. 338 (1788).—WAGL. Mon. Psitt. p. 599 (1832).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 297 (1866).

*Psittacus martinicanus* BRISS. Orn. IV, p. 242 (1760).

*Chrysotis leucocephalus* SWAINS. Class. Bds. II, p. 301 (1837).—Bp. Rev. Mag. Zool. 1854.—CAB. J. f. O. 1856, p. 105.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—FINSCH, Die Papag. Mon. Bearb. II, p. 520 (1868).—GRAY, Handl. Bds. II, p. 164 (1870).—GUNDL. J. f. O. 1874, p. 161.

*Amazona leucocephala* SCHLEG. Mus. Pays-Bas, Psitt. p. 59 (1864).  
*Psittacus (Chrysotis) collaria* (var. *bahamensis*) BRYANT, Pr. Bost. Soc. Nat. Hist. VI, p.— (1866).

*Chrysotis leucocephala* SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—CORY, List Bds. W. I. p. 20 (1885).

*Chrysotis collaria* CORY, Bds. Bahama I. p. 123 (1880).

SP. CHAR. *Male*:—General plumage green, many feathers narrowly tipped with dark brown; forehead and the top of the head to the eyes white; throat bright red, sometimes touched with green; some of the feathers on the belly brownish red; outer webs of primaries blue, inner webs brown; tail green, showing blue on outer webs of outer feathers, and red on the basal half of inner webs of all except the central ones, which sometimes show a trace near the shaft; bill yellowish white; iris brown.

The sexes are similar.

Length, 13; wing, 8; tail, 4.50; tarsus, .75; bill, 1.25.

HABITAT. Cuba and Bahamas.

Birds from the Island of Inagua, Bahamas, vary somewhat from Cuban examples. The Cuban bird shows deep crimson on the belly; the tail is light green, having the basal half of the inner web of the outer feathers deep red, rest of web pale yellowish green, the red marking becoming less and less on succeeding feathers until obsolete or nearly so on the two central ones; red coloring slight or absent on under wing-coverts. The Bahama bird differs from the above by showing very little red on the belly, sometimes nearly absent; more red on the crissum and under wing-coverts; tail bluish green, the red marking shown only on the two outer feathers. It is possible that the differences in question are not constant, but judging from the material examined I am of the opinion that the two forms are at least separable sub-specifically. If this should prove to be the case Dr. Bryant's name *bahamensis* would be used for the Bahama bird.

#### Chrysotis agilis (LINN.).

*Psittacus cayenensis* BRISS. Orn. IV, p. 237 (1760).

*Psittacus agilis* LINN. Syst. Nat. I, p. 143 (1766).—GOSSE, Bds. Jam. p. 266 (1847).

*Psittacus minor* VIEILL. Nouv. Dict. XXV, p. 314.

*Psittacus signatus* SHAW, Gen. Zool. VIII, p. 510.—KUHL, Conspl. p. 71 (1821).

*Psittacus astivus* KUHL, Conspl. p. 75 (1821).

*Psittacus virescens* BECHST. Kurze Ueb. p. 99.

*Chrysotis signatus* SWAINS. Class. Bds. II, p. 301 (1837).

*Chrysotis agilis* GRAY, List Psitt. p. 82 (1859).—SCL. Cat. Am. Bds. p. 354 (1862).—ALBRECHT, J. f. O. 1862, p. 203.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 284.—FINSCH, Die Papag. Mon. Bearb. II, p. 531 (1868).—GRAY, Handl. Bds. II, p. 164 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 20 (1885).

SP. CHAR. *Male*:—Top of head dark green, becoming somewhat lighter on the back; underparts light green; most of the feathers of the head, throat, and back delicately edged with black; a patch of black on the ear-coverts; primaries blue on the outer webs, edged with green on the basal portion, the blue color but slightly showing on the first four primaries; terminal portion of quills dark brown; tail green. One specimen before me has one of the wing-coverts bright red on one side, lacking in the other specimens.

The sexes are similar.

Length (skin), 10; wing, 6.50; tail, 4; tarsus, .40; bill, 1.20.

HABITAT. Jamaica.

### Chrysotis augusta (VIG.).

*Psittacus havanensis* KUHL, Conspl. p. 79 (1821).—WAGL. Mon. Psitt. p. 740 (1832).

*Psittacus augustus* VIG. P. Z. S. 1836, p. 80.—GRAY & MITCH. Gen. Bds. pl. 104 (1844-49).

*Chrysotis augustus* GRAY & MITCH. Gen. Bds. No. 16 (1844-49).

*Enochrus augustus* BP. Rev. Mag. Zool. 1854, p. 151.

*Amazona augustus* SCHLEG. Mus. Pays-Bas, p. 50 (1864).

*Chrysotis augusta* SCL. P. Z. S. 1865, p. 437.—FINSCH, Die Papag. Mon. Bearb. II, p. 557 (1868).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—LAWR. Pr. U. S. Nat. Mus. I, pp. 62, 487 (1878).—SCL. P. Z. S. 1881, p. 627.—CORY, List Bds. W. I. p. 20 (1885).

SP. CHAR.—Top of the head tinged with purplish, shading into green on the nape; cheeks and throat reddish purple, the feathers edged with bluish; the feathers of the sides of the neck and nape tipped with dull purple, forming a sort of collar; back and wings green; feathers on the rump slightly tipped with bluish; breast and underparts dull purple, the feathers pale at the tips, and showing delicate bluish edging when held in the light; flanks green; a patch of red on the outer webs of two of the secondaries, faintly showing on the

last primary, dull towards the terminal portion, becoming bright scarlet on the basal half; a patch of red on the edge of the carpus; quills brown; tail purplish-brown; under surface of tail green.

Length, 17; wing, 11; tail, 7; tarsus, .75; bill, 1.50.

HABITAT. Dominica.

### Chrysotis guildingi (VIG.).

*Psittacus guildingi* VIG. P. Z. S. 1836, p. 80.—GRAY, Gen. Bds. No. 28 (1844-49).

*Chrysotis guildingi* BP. Rev. Mag. Zool. 1854, p. 151.—FINSCH, Die Papag. Mon. Bearb. II, p. 559 (1868).—GRAY, Handl. Bds. II, p. 164 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).—LAWR. Pr. U. S. Nat. Mus. I, pp. 193, 487 (1878).—LISTER, Ibis, 1880, p. 42.—SCL. P. Z. S. 1881, p. 627.—CORY, List Bds. W. I. p. 20 (1885).

*Amazona guildingi* SCHLEG. Mus. Pays-Bas, p. 49 (1864).

SP. CHAR.—Top of the head and cheeks yellowish white, shading into yellowish orange on the throat, and into bluish feathers with black edgings on the sides of the neck and nape; back pale yellowish brown, feathers edged with dull black; underparts pale reddish brown, feathers shading into green at the ends, and tipped with black on the belly; under surface of tail dull orange, pale yellow at the tip, feathers banded across the middle by a broad stripe of green; upper surface of tail-feathers yellow at base and tip, showing a band of blue across the centre; primaries dark blue, the basal half of the first five yellow, the rest shading into orange on the outer webs of the basal half and showing less and less yellow on the inner webs; under surface of wing yellow; greenish on the under wing-coverts; bill pale.

The sexes are apparently similar.

Length, 19; wing, 10.75; tail, 7; tarsus, .75.

HABITAT. St. Vincent.

### Chrysotis bouqueti (BECHST.).

*Psittacus arausiacus* MÜLL. Syst. Nat. Suppl. p. 79 (1766).

*Psittacus autumnalis* var.  $\beta$ . GMEL. Syst. Nat. I, p. 345 (1788).—LATH. Ind. Orn. p. 124 (1790).

*Psittacus bouqueti* BECHST. Lath. Ueb. p. 99 (1793).—KUHL, Conspl. p. 76 (1821).

*Psittacus cyaneocapillus* VIEILL. Enc. Méth. p. 1373.—BURM. Syst. Ueb. II, p. 186.

*Psittacus cærulifrons* SHAW, Gen. Zool. VIII, p. 515.—VOIGHT, Cuv. Ueb. 1831, p. 741.

*Chrysotis cyaneocephalus* SWAINS. Class. Bds. II, p. 301 (1837).

*Chrysotis bouqueti* GRAY, Gen. Bds. II, No. 11 (1844-49).—BP. Rev. Mag.

Zool. 1854.—SCL. P. Z. S. 1881, p. 627.—CORY, List Bds. W. I. p. 20 (1885).

*Chrysotis nichollsi* LAWRIE. Pr. U. S. Nat. Mus. III, p. 254 (1880).

SP. CHAR.—Front of head and throat dull purplish blue, palest on the throat; the feathers of the cheeks green, tipped with bluish; upper parts dark green, and the feathers tipped with dark brown; quills dark brown, tinged with green on the outer webs, and showing a patch of red on the outer web of the tenth and eleventh feathers; a patch of dull red mixed with yellow on the upper part of the breast joining the throat; underparts green, the feathers narrowly edged with bluish; tail-feathers showing red at the base of the inner webs, succeeded by dark green at the middle, and tipped with light green.

Length, 15; wing, 9.25; tail, 6.50; tarsus, .62; bill, 1.50.

HABITAT. Dominica.

### *Chrysotis versicolor* (MÜLL.).

*Psittacus versicolor* MÜLL. Syst. Nat. Suppl. p. 78 (1766).

*Chrysotis cyanopsis* FINSCH, Die Papag. Mon. Bearb. II, p. 528 (1868).—

SCL. & SALV. Nom. Avium Neotr. p. 113 (1873).

*Œnochrus versicolor* GRAY, Handl. Bds. II, p. 165 (1870).

*Chrysotis bouqueti* SCL. P. Z. S. 1874, p. 323; ib. 1875, p. 61.—ALLEN, Bull. Nutt. Orn. Club. V, p. 169 (1880).

*Chrysotis versicolor* SCL. P. Z. S. 1881, p. 627.—CORY, List Bds. W. I. p. 20 (1885).

SP. CHAR.—Forehead and in front of the eye dark blue; top of the head, cheeks, and throat pale blue, the feathers tipped with black; a few yellowish feathers at the base of the skull; breast red, the feathers tipped with dark brown; underparts red, the feathers tipped with green; back and wing-coverts green, tipped with black; primaries dark blue on the basal portion of the outer webs; rest of the primaries dark brown; a broad patch of red on the outer webs on the tenth and eleventh feathers; outer tail-feathers showing bright red at the base, a band of blue extending half the length of the feather, and the terminal portion being yellow; under surface of tail-feathers green, having the terminal portion pale greenish yellow, and showing the red on the base of the outer feathers.

Length, 18; wing, 11; tail, 8; tarsus, .75; bill, 1.40.

HABITAT. Santa Lucia.

## FAMILY STRIGIDÆ.

### GENUS *Strix* LINN.

*Strix* LINNAEUS, Syst. Nat. I, p. 131 (1766).

**Strix flammea furcata (TEMM.).**

*Strix furcata* TEMM. Pl. Col. p. 432 (1832).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 34 (1840).—GUNDL. J. f. O. 1855, p. 467.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 227 (1865); *ibid.* J. f. O. 1871, p. 79.  
*Strix pratincola* GOSSE, Bds. Jam. p. 23 (1847).—SCL. P. Z. S. 1861, p. 79.—ALBRECHT, J. f. O. 1862, p. 204.  
*Glyphidura furcata* GRAY, Handl. Bds. I, p. 52 (1869).  
*Strix flammea* var. *furcata* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 12 (1874).  
*Strix flammea fuscata* CORY, List Bds. W. I. p. 21 (1885).

This form varies from the usual coloration in having the secondaries and tail nearly white, the latter usually without bars.

Wing, 12.50; tail, 5.70; tarsus, 2.75.

HABITAT. Cuba and Jamaica.

*Bubo virginianus* is recorded from Jamaica in Sclater & Salvin's 'Nomenclator Avium Neotropicalium.' I have been unable to find other West Indian records.

**Strix flammea nigrescens LAWR.**

*Strix flammea* var. *nigrescens* LAWR. Pr. U. S. Nat. Mus. I, p. 64 (1878).  
*Strix flammea* LISTER, Ibis, 1880, p. 44.  
*Strix flammea nigrescens* CORY, List Bds. W. I. p. 21 (1885).

SP. CHAR.—"Upper plumage of a fine blackish brown, rather sparsely marked with small white spots; the tail is crossed with alternate bands of brown and light dull ochraceous freckled with brown; the wings are the color of the back, somewhat intermixed with rufous; the under plumage is light reddish-ochraceous, marked with small, round black spots (the color is lighter than the under plumage of the Costa Rica specimen); the ends of the ruff-feathers are dark reddish-brown; feathers around the eye, black; the face is of a light reddish fawn color. Bill white; iris deep chocolate, half an inch in diameter. Length (fresh), 13 in.; wing, 10; tail, 4½; tarsus 2." (LAWR., orig. descr., l. c.)

HABITAT. St. Vincent and Dominica.

**Strix flammea pratincola.**

*Strix pratincola* BONAP. List, 1838, p. 7.  
*Strix flammea* var.? BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 65 (1867) (Bahamas).

*Strix flammea* var. *pratincola* BD. BWR. & RIDGW. Hist. N. Am. Bds. p. 13, III (1874).—CORY, Bds. Bahama I. p. 125 (1880).

*Strix flammea pratincola* CORY, List Bds. W. I. p. 21 (1885).

This form occurs in the Bahama Islands.

### Strix glaucops KAUP.

*Athene dominicensis* BP. Conspl. I, p. 38 (1850).—SALLÉ, P. Z. S. 1857, p. 231.

*Strix glaucops* "KAUP, Contr. Orn. p. 118 (1852)"; ib. Tr. Z. S. IV, p. 246.—PELZ. J. f. O. 1872, p. 23.—CORY, Bds. Haiti & San Domingo, p. 117 (1885); ib. List Bds. W. I. p. 21 (1885).

*Strix (Athene) dominicensis* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 90 (1867).

*Strix flammea* SHARPE, Cat. Bds. Brit. Mus. II, p. 292 (1875).

*Strix dominicensis* CORY, Bull. Nutt. Orn. Club, VII, p. 95 (1883).

SP. CHAR. *Male*:—General plumage above dark brown, shading into orange-rufous on the side of the neck; quills showing inner webs brownish; outer webs dull orange-rufous, banded with brown; entire underparts pale orange-rufous, mottled with zigzag marking of light brown, whitening somewhat on the throat and abdomen; face deep gray; an ante-orbital spot of black; circle of feathers around the face dark chestnut, bordered with black on the throat; tarsus not feathered to the feet.

The sexes are apparently similar.

Length, 13.50; wing, 10; tail, 4.60; tarsus, 3.45.

HABITAT. Haiti and San Domingo.

### GENUS *Pseudoscops* KAUP.

*Pseudoscops* KAUP, Isis, 1848, p. 769.

#### *Pseudoscops grammicus* (GOSSE).

*Ephialtes grammicus* GOSSE, Bds. Jam. p. 19 (1847).

*Pseudoscops grammicus* KAUP, Isis, 1848, p. 769.—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—GRAY, Handl. Bds. I, p. 51 (1869).—SCL. & SALV. Nom. Avium Neotr. p. 116 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 21 (1885).

*Scops grammicus* BP. Conspl. I, p. 46 (1850).—STRICKL. Orn. Syn. p. 205.  
*Asio grammicus* SHARPE, Cat. Bds. Brit. Mus. II, p. 242 (1875).

"*Adult female*. General colour above sandy-buff, transversely vermiculated with dark brown, more distinctly on the back and scapular feathers, some of which are mesially streaked with dark

brown, some of the outermost rather more broadly barred with sandy colour, but not exhibiting any trace of white or buff spots; head and neck rather lighter sandy colour, the transverse black lines very regular, especially on the ear tufts, which are coloured like the rest of the head, but are nearly uniform rufous on their inner webs; entire facial aspect foxy red, the hindermost of the ear-coverts whitish, tipped with black, merging in the ruff, which is composed of sandy-buff feathers, black at tip and at base; the stiff gular feathers sandy rufous, streaked and indistinctly barred with black; chin-feathers buffy white; rest of the under surface deep sandy rufous, with faint indications of dusky vermiculations of brown, the abdominal plumes more or less verging on white and showing very little of the mesial black streaks which are so distinct on the breast feathers; leg feathers uniform tawny buff, as also the under tail-coverts; under wing-coverts buff, slightly washed with sandy-rufous, the lower series black, with fulvous bases, forming a bar across the wing, and resembling the inner lining of the quills, which are fulvescent towards the base of the inner web, on which they are broadly barred with black; upper wing-coverts resembling the back, and very coarsely vermiculated with dark brown, the sandy-buff bars being pretty apparent here and there, and especially distinct on the outer web of the spurious quills; primary-coverts dark brown, irregularly barred across with sandy-buff; quills banded alternately for their entire length with blackish brown and sandy-buff, these bars less distinct on the secondaries, the light interspaces obscured with dark brown vermiculations, especially the innermost, which consequently resemble the back; tail sandy-buff barred across with dark brown, about eleven bars being traceable on the centre feathers, the interspaces more or less mottled with vermiculations of brown, the exterior rectrix paler and more fulvous, crossed with about thirteen brown bars; cere blackish grey; bill pale blue-grey; feet dull lead-colour; claws horny grey; iris hazel. Total length 12.2 inches, wing 8.4, tail 5.1, tarsus 1.55." (SHARPE, I. c.)

HABITAT. Jamaica.

#### GENUS *Asio* BRISS.

*Asio* BRISSON, Orn. I, p. 28 (1760).

#### *Asio stygius* (WAGL.).

*Nyctalops stygius* WAGL. Isis, 1832, p. 1221.—GRAY, List Gen. Bds. p. 6.  
—SCL. & SALV. Nom. Avium Neot. p. 116 (1873).

*Otus sygnapa* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 31 (1840).—GRAY, Gen. Bds. I, p. 40 (1844-49).—BP. Conspl. I, p. 50 (1850).—CAB. J. f. O. 1855, p. 465.—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 226 (1865); ib. J. f. O. 1871, p. 374.

*Otus stygius* PUCHER. Rev. Mag. Zool. 1849, p 29.—GRAY, Gen. Bds. I, p. 40 (1844-49).—KAUP, Contr. Orn. 1852, p. 113.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 17 (1874).

*Otus melanopsis* LICHT. Nom. Av. p. 6.

*Asio stygius* STRICKL. Orn. Syn. p. 207.—SHARPE, Cat. Bds. Brit. Mus. II, p. 241 (1875).—CORY, List Bds. W. I. p. 21 (1885).

*Asio signata* STRICKL. Orn. Syn. p. 212.

SP. CHAR. "Adult. Above of a nearly uniform chocolate-brown. the hinder neck and wig with a few longitudinal spots of light ochre, rather more oval in shape on the latter, the rest of the upper surface having concealed spots and vermiculations of whitish buff, rather larger and more distinct on the outer margin of the scapulars; wing-coverts uniform with the back, with the same more or less concealed vermiculations, these being absent on the primary-coverts, which are uniform brown; quills chocolate-brown like the back, with obsolete bars of lighter brown, more distinct on the secondaries, where they are often replaced by ochraceous spots or vermiculations, the innermost uniform with the back, and slightly freckled with vermiculations of whitish buff or light ochre, the primaries with a few spots of deep ochre on the outer web, only distinct or of any size near the base; upper tail-coverts brown, with distinct bars of bright ochre; tail deep chocolate-brown, with a whitish tip, and crossed with five or six additional bars of bright ochre, these bars more numerous (seven or eight) on the inner web when the tail is spread; forehead and feathers above the eye brown, streaked with silvery grey; ear-tufts 2 inches long, chocolate-brown, with outer margins of light ochre; sides of face dingy brown, the cheeks streaked with fulvous, and the ear-coverts fulvous at their bases; ruff brown, mottled with light ochre, the hinder feathers almost entirely ochraceous, with brown margins and shaft-stripes; chin dingy brown, mottled with pale ochraceous, the ruff across the throat composed of white feathers with dark brown centres; rest of under surface ochraceous, mottled with brown, this color more prevalent on the upper breast where it occupies the centre of the feathers; the lower breast and abdomen streaked with brown down the middle of the feathers, with dark brown lateral bars to each, the interspaces being oval spots of white; leg-feathers deep ochre, spotted with triangular brown markings; under tail-coverts deep ochre, the longest ones streaked with brown; under wing-coverts deep ochre, the outermost spotted and margined with brown, the greater series light ochraceous at base, dark brown at tip, thus resembling the inner lining of the wing, which is almost entirely dark brown, excepting a few irregular bars of ochraceous, these being almost entirely absent near the primaries. Total length 20 inches, wing 13.7, tail 7.8, tarsus 1.4." (SHARPE, l. c.)

HABITAT. Cuba.

**Asio accipitrinus (PALL.).**

*Strix accipitrina* PALL. Reise Russ. Reich, I, p. 455 (1771).

*Otus brachyotus* LEMB. Aves Cuba, p. 21 (1850).

*Brachyotus palustris* CAB. J. f. O. 1855, p. 465 (Cuba).

*Brachyotus cassini* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 226 (1865); *ib.* J. f. O. 1871, p. 375 (Cuba).

*Asio accipitrinus* SHARPE, Cat. Bds. Brit. Mus. II, p. 234 (1875).—CORY, List Bds. W. I. p. 21 (1885).

Accidental in Cuba.

**Asio portoricensis RIDGW.**

*Strix brachyotus* SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601 (Porto Rico) (?)

*Brachyotus cassini* GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 165, 1878; *ib.* J. f. O. 1878, p. 158 (Porto Rico).

*Asio portoricensis* RIDGW. Pr. U. S. Nat. Mus. IV, p. 366 (1881) (Porto Rico).—CORY, List Bds. W. I. p. 21 (1885).

SP. CHAR. "Above dusky brown, nearly or quite uniform on the dorsal region; the scapulars, however, narrowly bordered with pale ochraceous or dull buff; feathers of the head narrowly, and those of the nape broadly, edged with buff; rump and upper tail-coverts paler brown or fawn-color, the feathers marked near their tips by a crescentic bar of dark brown. Tail deep ochraceous, crossed by about five distinct bands of dark brown, these very narrow on the lateral rectrices, but growing gradually broader toward the intermediae, which are dark brown, with five or six pairs of ochraceous spots (corresponding in position to the ochraceous interspaces on the outer tail-feathers), these spots sometimes having a central small brown blotch. Wings with dark brown prevailing, but this much broken by a general and conspicuous spotting of ochraceous; primaries crossed with bands of dark brown and deep ochraceous, the latter broadest on the outer quills, the pictura of which is much as in *A. accipitrinus*, but with the lighter color usually less extended. Face with dull, rather pale, ochraceous prevailing; this becoming nearly white exteriorly, where bordered, around the side of the head, by a uniform dark brown post-auricular bar; eyes entirely surrounded by uniform dusky, this broadest beneath and behind the eye. Lower parts pale ochraceous or buff, the crissum, anal region, tarsi, and tibiae entirely immaculate; jugulum and breast marked with broad stripes of dull brown, the abdomen, sides and flanks with narrow stripes or streaks of the same. Bill dusky; iris yellow. Wing, 11.25-12.00; tail, 5.25-5.50; culmen, .70; tarsus, 1.85-2.00; middle toe, 1.20-1.30" (RIDGW., orig. descr.)

HABITAT. Porto Rico.

GENUS **Gymnasio** BONAP.*Gymnasio* BONAPARTE, Rev. Mag. Zool. 1854, p. 543.**Gymnasio nudipes** (DAUD.).*Strix nudipes* DAUD. Traité d'Orn. II, p. 199 (1800).—VIEILL. Ois. Am. Sept. I, p. 45 (1807).*Noctua nudipes* STEPH. Gen. Zool. XIII, p. 70.—LESS. Traité d'Orn. p. 104.*Athene nudipes* GRAY, Gen. Bds. I, p. 35 (1844).—STRICKL. Orn. Syn. p. 173.*Surnia nudipes* BP. OSS. Rég. An. Cuv. p. 59.*Surnium nudipes* KAUP, Contr. Orn. p. 120 (1852).*Gymnasio nudipes* BP. Rev. Mag. Zool. 1854, p. 543.—SHARPE, Cat. Bds. Brit. Mus. II, p. 149 (1875).—CORY, List Bds. W. I. p. 21 (1885).*Gymnoglaux nudipes* A. & E. NEWTON, Ibis, 1859, p. 54; *ib.* 1860, p. 307.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 374.—SCL. & SALV. Nom. Avium Neotr. p. 116 (1873).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 166 (1878); *ib.* J. f. O. 1878, p. 158.*Gymnoglaux newtoni* LAWR. Ann. Lyc. N. Y. VIII, p. 258 (1867).  
*Gymnoglaux krugii* CAB. J. f. O. 1875, p. 223.

SP. CHAR.—Entire upper surface reddish brown; feathers of the breast and belly pale, variously dotted and banded with light brown; face pale brown, showing whitish between the eyes; the feathers slightly marked with whitish on the cheeks and throat; under tail-coverts white, narrowly shafted with brown; tail dull brown; primaries brown, dotted with white, mixed with brownish white on the outer webs; lining of wing dull white, mottled with brown on the carpus.

Length, 9; wing, 6.75; tail, 3; tarsus, 1.45; bill, .70.

HABITAT. Porto Rico, St. John, St. Croix, and St. Thomas.

**Gymnasio lawrenceii** (SCL. & SALV.).*Noctua nudipes* LEMB. Aves Cuba, p. 23, pl. 4, fig. 2 (1850).*Gymnoglaux nudipes* CAB. J. f. O. 1855, p. 465.—LAWR. Ann. Lyc. N. Y. VII, p. 257 (1862).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 226 (1865); *ib.* J. f. O. 1871, p. 376.*Ephialtes nudipes* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).*Gymnoglaux lawrenceii* SCL. & SALV. P. Z. S. 1858, p. 328, pl. 29; *ib.* Nom. Avium Neotr. p. 117 (1873).*Gymnasio lawrencei* GRAY, Handl. Bds. I, p. 47 (1869).*Gymnasio lawrenceii* SHARPE, Cat. Bds. Brit. Mus. II, p. 150 (1875).—CORY, List Bds. W. I. p. 21 (1885).

SP. CHAR.—Upper surface dark brown, mottled with white on the back and wing-coverts; face dull brownish white, palest on the throat;

breast brown mixed with white; rest of underparts dull white, the feathers lined with brown; primaries dark brown marked with white on the outer webs; tail dark brown, showing an indistinct band of white on the under surface; bill horn-color.

Length, 8; wing, 5.50; tail, 3; tarsus, 1.25; bill, .50.

HABITAT. Cuba.

#### GENUS *Glaucidium* BOIE.

*Glaucidium* BOIE, Isis, 1826, p. 976.

##### *Glaucidium siju* (D'ORB.).

*Noctua siju* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 33 (1840).—GUNDL. Journ. Bost. Soc. Nat. Hist. VI, p. 318 (1857).

*Athene siju* GRAY, Gen. Bds. I, p. 25 (1844).—Cass. Cat. Strig. Phila. Mus. p. 13.

*Nyctale siju* BP. Conspl. I, p. 54 (1850).—STRICKL. Orn. Syn. p. 177.

*Strix havanensis* LICHT. Mus. Berol. unde.

*Glaucidium havanense* KAUP, Contr. Orn. p. 103 (1852).

*Glaucidium siju* CAB. J. f. O. 1855, p. 59.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 226 (1865).—GRAY, Handl. Bds. I, p. 42 (1869).—GUNDL. J. f. O. 1871, p. 375.—RIDGW. Pr. Bost. Soc. Nat. Hist. 1873, p. 65.—SCL. & SALV. Nom. Avium Neotr. p. 117 (1873).—SHARPE, Ibis, 1875, p. 59; ib. Cat. Bds. Brit. Mus. II, p. 193 (1875).—CORY, List Bds. W. I. p. 21 (1885).

SP. CHAR.—Very small. Top of head pale brown, the feathers delicately dotted with dull white; face dull white mixed with brownish; throat dull white, shading into mixed light brown and white on the breast; underparts white, the feathers streaked with dark brown; thighs rufous brown; under tail-coverts white; primaries dark brown, dotted and blotched with white, heaviest on the basal portions; back and wing-coverts dull brown, mottled with pale brown; upper surface of tail-feathers dark brown, narrowly banded with brownish white; bill pale.

A female in my collection has the entire upper surface reddish brown, with the feathers on the head unspotted.

Length, 7; wing, 4; tail, 2.40; tarsus, .75; bill, .45.

HABITAT. Cuba.

#### GENUS *Speotyto* GLOGER.

*Speotyto* GLOGER, Handb. Naturg. p. 226, 1842.

***Speotyto dominicensis* CORY.**

*Speotyto cunicularia* SHARPE, Cat. Bds. Brit. Mus. II, p. 142 (1875).—  
CORY, Bds. Haiti & San Domingo, p. 118 (1885).

*Athene cunicularia* BRACE, Pr. Bost. Soc. Nat. Hist. XIX, p. 240 (1877)  
(?)

*Speotyto cunicularia dominicensis* CORY, Bull. Nutt. Orn. Club, VI, p.  
154 (1881); *ib.* List Bds. W. I. p. 22 (1885).

SP. CHAR. *Male*:—General plumage brown; the head marked with streaks  
of dull white; feathers of the nape showing a sub-terminal bar of  
dull white; back mottled and barred with dusky white; quills brown  
tipped with dull white and barred with pale brown; secondaries  
marked on the outer web; tail brown, tipped with buff white and  
banded; ear-coverts brown; cheeks dull white; throat and upper  
neck dull white, separated from each other by a mark of sandy buff,  
barred with brownish; underparts dull white, barred with brown,  
the bars becoming narrower on the lower part of the body; thighs  
buff; under wing-coverts yellowish buff, sometimes spotted with  
brown near the outer edge, and becoming dull white on the edge of  
the wing; tarsus feathered in front to the foot; iris yellow.

The sexes are similar.

Length, 8; wing, 6; tail, 2.50; tarsus, 1.50.

HABITAT. Haiti. Bahamas?

It is possible that the species mentioned by Brace was the  
Florida form. I have never seen a specimen from the Bahama  
Islands.

***Speotyto guadeloupensis* (RIDGW.).**

*Speotyto cunicularia* var. *guadeloupensis* RIDGW. in Bd. Bwr. & Ridgw.  
Hist. N. Am. Bds. III, p. 90 (1874).—COUES, Bds. N. W. p. 322  
(1874).

*Speotyto guadeloupensis* SHARPE, Cat. Bds. Brit. Mus. II, p. 147 (1875).—  
CORY, List Bds. W. I. p. 21 (1885).

SP. CHAR.—“Primaries without broad or regular bars of whitish on either  
web; primary-coverts plain brown. Brown markings on the lower  
parts regularly transverse, and equal in extent to the white. White  
spots on the upper parts very small, reduced to mere specks on the  
dorsal region.

“Wing, 6.40; tail, 3.40; culmen, .60; tarsus, 1.82; middle toe, .85.  
Outer tail-feathers and inner webs of the primaries with the light  
(ochraceous) bars only about one fourth as wide as the brown (dis-  
appearing on the inner quills).” (RIDGW., orig. descr., l. c.)

HABITAT. Guadeloupe and St. Nevis.

**Speotyto amaura LAW.R.**

*Speotyto amaura* LAW.R. Pr. U. S. Nat. Mus. I, p. 234 (1878).—CORY, List. Bds. W. I. p. 21 (1885).

SP. CHAR. *Male*:—"Upper plumage of a fine deep, brown color, marked with roundish spots of light fulvous; the spots are smallest on the crown, hind neck, and smallest wing-coverts; they are conspicuously large on the other wing-coverts, the dorsal region, scapulars, and tertials; the quills are blackish brown, with indented marks of pale reddish fulvous on the outer webs of the primaries, and large roundish paler spots on the inner webs; under wing-coverts reddish fulvous sparsely mottled with black; tail dark brown, of the same color as the back, crossed with four bars (including the terminal one), of light reddish fulvous, which do not quite reach the shaft on each web; bristles at the base of the bill black, with the basal portion of their shafts whitish; front white, superciliary streak pale fulvous; cheeks dark brown, the feathers tipped with fulvous; upper part of throat pale whitish buff, the lower part grayish white, with a buffy tinge, separated by a broad band of dark brown across the middle of the throat, the feathers of which are bordered with light fulvous; the sides of the neck and the upper part and sides of the breast are dark brown, like the back, the feathers ending with fulvous, the spots being larger on the breast; the feathers of the abdomen are pale fulvous, conspicuously barred across their centres with dark brown; on some of the feathers the terminal edgings are of the same color; the flanks are of a clear light fulvous, with bars of a lighter brown; under tail-coverts fulvous, with indistinct bars of brown; thighs clear fulvous, with nearly obsolete narrow dusky bars; the feathers of the tarsi are colored like the thighs and extend to the toes; bill clear light yellow with the sides of the upper mandible blackish, toes dull yellowish-brown.

"Length (fresh), 8½ in.; wing, 6½; tail, 3½; tarsus, 1¼.

"The female differs but little from the male in plumage; the bars on the abdomen appear to be a little more strongly defined, and at the base of the culmen is a small red spot. There are two females in the collection, the other also having the red spot; in one the tarsi are feathered to the toes, in the other only for two-thirds their length.

"Length of one (fresh), 8 in.; wing, 6½; tail, 2½; tarsus, 1¼.

"Length of the other, 8½; wing, 6½; tail, 3; tarsus, 1¼.

"Compared with *gaudeloupensis*, the prevailing color is dark brown, instead of a rather light earthy-brown, and the spots on the interscapular region are much larger; it is more strikingly barred below, the other having the breast more spotted; the bars on the tail are four instead of six. In the Antigua bird each feather of the breast is crossed with but one bar, while those of the other are crossed with two." (LAW.R., orig. descr., l. c.)

HABITAT. Antigua.

## RECENT LITERATURE.

'The Standard Natural History'—'Birds.'\*—The 'bird volume' of the well-known 'Standard Natural History,' published by S. E. Casino and Company of Boston, well maintains the high degree of excellence characterizing this important treatise on Zöölogy, now about completed in six beautifully illustrated imperial octavo volumes, mostly by the leading American authorities on the various subjects treated. The bird volume is mainly by Dr. Leonhard Stejneger, who is doubtless responsible for its general style and character, he having written the admirable 'Introduction' (pp. 1-20), and nearly two-thirds of the general text, as follows: Subclass I, Saururæ (the Archæopteryx), pp. 21-23; Subclass II, Odontotormæ (toothed birds having the teeth in sockets), pp. 23-26; Subclass III, Odontoholcæ (toothed birds with the teeth in grooves), pp. 27-30; Subclass IV, orders Struthiones (Ostriches, Cassowaries, Moas, Dodo, etc.), pp. 31-47; Æpiornithes, pp. 47, 48; Aptyrges (Kiwis), pp. 48-51; Crypturi (Tinamous), pp. 51-54; Gastornithes (the extinct *Gastornis* and allies), pp. 54-55; Ptilopteri (Penguins), pp. 56-63; Cecomorphæ (Grebes, Auks, Guilemots, Puffins, Skuas, Gulls, Terns, Skimmers, Albatrosses, and Petrels), pp. 64-91; Grallæ (Plovers, Sandpipers, Cranes, Rails, etc.), pp. 91-132; Chenomorphæ (Screamers, Ducks, Geese, Swans, Flamingoes, etc.), pp. 132-157; Herodii (Ibises, Storks, Herons, Boatbills, etc.), pp. 157-179; Steganopodes (Tropic-birds, Frigate-birds, Pelicans, Cormorants, Darters, etc.), pp. 179-195; Picariae (except the Hummingbirds), pp. 368-441; Passeres, pp. 458-547. In more general terms, Dr. Stejneger has written the three subclasses of extinct birds, the Struthious birds, the wading and swimming birds, the so-called Picarian groups except the Hummingbirds, and the great group of Passeres.

Of the other groups Mr. Daniel G. Elliot has written the Opisthocomi (pp. 196, 197), the Gallinae (pp. 197-237), the Columbæ (pp. 237-259), and the Hummingbirds (pp. 441-457),—groups to which he is well known to have given special attention.

Mr. Walter B. Barrows is responsible for the Accipitres (pp. 260-348), and Mr. J. S. Kingsley for the Psittaci (pp. 349-367).

The work as a whole is deserving of high praise. While to a large degree 'popular' in treatment, it presents a fair reflection of our present knowledge of the structure and classification of the class Aves. As an authoritative reviewer of the volume has already well said, "No work issued in Europe contains such a good general account of the Class of Birds according to the most recent researches of naturalists, and brings one into acquaintance with the newest discoveries in this group of vertebrates."

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\* The Standard | Natural History, | Edited by John Sterling Kingsley. | Vol. IV. | Birds. | Illustrated | by two hundred and seventy-three wood-cuts and twenty-five | full-page plates. | Boston: | S. E. Casino and Company. | 1885. Imp. 8vo, pp. viii + 558.

The classification presents a few innovations as regards the relative rank and limitations of certain of the higher groups, where a few new names are introduced, and a few changes are made in the nomenclature of genera and species. The class Aves is divided into four subclasses, as already indicated, three of them consisting entirely of extinct types, while the fourth (*Eurhipiduræ*) includes all the living representatives of the class and their more closely allied extinct forms. This latter subclass is divided into three 'super-orders' and eighteen 'orders.' The work begins with the 'lower' or more generalized forms, as the *Archæopteryx* and *Toothed Birds*, and closes with the *Passeres*. It is illustrated with 25 full-page plates and 273 cuts in the text, not a few of the latter being anatomical.

Lack of space forbids a detailed review, quotations, or extended criticism.

In the matter of editorship, we may remark that the passage from one group to another is often obscurely indicated, which a more formal use of subheadings would have obviated. While the names of the authors are given on a leaf preceding the title page, there is nothing there or elsewhere to indicate the share of each author's work, except the signatures to the articles, the discovery of which entails a laborious search, as they seem to be inserted on no easily discoverable system. The index, occupying only eight pages, could easily have been considerable extended with profitable results to the reader. On the whole, however, the defects are slight, while the excellences are manifold, and the general plan and execution are admirable. To the general reader the work must long prove a boon, and to the specialist will be hardly less valuable.—J. A. A.

**Brewster on 'Bird Migration.'**—Mr. Brewster's important memoir\* of 22 pages, forming No. I of the 'Memoirs of the Nuttall Ornithological Club,' consists of two papers relating to the subject of bird migration. The first (read at the last meeting of the American Ornithologists' Union, and here first published) is a detailed account of the author's observations made at the Point Lepreaux Lighthouse, where he spent the interval from Aug. 13 till Sept. 26, 1885, for the purpose of studying the movements of the birds on their autumnal journey southward. The locality and other circumstances proved exceedingly favorable for observing the behavior of birds under the fascination of a powerful light, and their manner of 'striking' these fatally alluring objects is well detailed, the narrative adding much to our knowledge of a matter previously little understood. The second part of the memoir deals with the general

\* Memoirs of the Nuttall Ornithological Club. | — | No. I. | — | Bird Migration. | By William Brewster. | Contributed by courtesy of the American Ornithologists' Union's Committee on the | Migration and Geographical Distribution of North American Birds. | Part I.—Observations on Nocturnal Bird Flights at | the Lighthouse at Point Lepreaux, Bay of | Fundy, New Brunswick. | Part II.—Facts and Theories respecting the general | subject of Bird Migration. | — | Cambridge, Mass. | Published by the Club. | March, 1886. Imp. 8vo, pp. 22.

subject of bird migration, its causes and methods, based on the writer's long experience and mature reflection. The 'facts' here presented are of highest interest; the theories and suggestions, while original as regards their presentation in the present connection, are but to a small extent novel, and in the main confirmatory of hypotheses previously suggested; but for this reason they lose none of their interest or value. The paper is not only an able presentation of the subject in its general aspects, but is a valuable contribution to this interesting subject, through the presentation of much new and valuable matter.—J. A. A.

**Minor Ornithological Publications.**—The 'American Naturalist,' Vol. XIX, 1885, contains, besides extracts and abstracts from other publications, the following (Nos. 1037-1041) :

1037. *A Crow [Corvus americanus] Cracking Clams.* By S. Lockwood. *American Naturalist*, Vol. XIX, April, 1885, p. 407.—By dropping them on a fence.

1038. *The Turkey Buzzard breeding in Pennsylvania.* By Witmer Stone. *Ibid.*, p. 407.—Several instances of its breeding in Chester County recorded.

1039. *Birds out of Season—a Tragedy.* By Charles Aldrich, *Ibid.*, May, 1885, pp. 513, 514.—A Chewink (*Pipilo erythrophthalmus*), wintering at Webster, Ia., was finally killed by a Blue Jay, after it had for weeks braved a temperature of  $-20^{\circ}$  to  $-35^{\circ}$ .

1040. *Harelda glacialis at New Orleans.* By G. Kohn. *Ibid.*, Sept. 1885, p. 896.—An old male in winter plumage was shot on Lake Catherine Feb. 28, 1885.

1041. *The Problem of the Soaring Bird.* By I. Lancaster. *Ibid.*, Nov. and Dec. 1885, pp. 1055-1058, 1162-1171.

'Science,' Vols. V and VI, 1885, contains the following (Nos. 1042-1054) :

1042. *The coming of the robin and other early birds.* By Dr. C. Hart Merriam. *Science*, Vol. IV, pp. 571, 572.—On the arrival of the Robin (*Merula migratoria*) at various places in North America in the spring of 1884, and a summary statement of the average dates of arrival of various other species in the latitude of New York City and Southern Connecticut.

1043. *A second phalanx in a carinate bird's wing.* By Dr. G. Baur. *Ibid.*, V, May 1, 1885, p. 355.—"A rudiment of a second cartilaginous phalanx in the third digit" found "in an embryo of *Anas domestica*."

1044. *A complete fibula in an adult living carinate-bird [Pandion carolinensis].* By Dr. G. Baur. *Ibid.*, May 8, 1885, p. 375.

1045. *A complete fibula in an adult living carinate-bird [Colymbus septentrionalis].* By Dr. R. W. Shufeldt. *Ibid.*, June 26, 1885, p. 516.

1046. *Untimely death of a chipping sparrow.* By W. L. Poteat. *Ibid.*, VI, July 24, 1885.—Hung by the neck by becoming entangled in a horse-hair from its nest.

1047. *The Audubon collection of birds presented to Amherst college.* Editorial. *Ibid.*, Aug. 14, 1885, 140.—"There are about six hundred skins

of birds in the collection, some of which are labelled in the handwriting of Audubon himself, and many of which are the typical specimens by which the species were determined." About one hundred of them have been mounted by Prof. H. A. Ward of Rochester. The collection is the gift of the Hon. Elbert E. Fairman, LL. D., of Warsaw, N. Y.

1048. *The English sparrow.* By Ralph S. Tarr. *Ibid.*, Nov. 6, 1885, 416.—On the dates of its introduction, increase, food, and the policy to be pursued toward the bird.

1049. *A search for the gigantic bird [Æpyornis] of Madagascar.* Anon. *Ibid.*, p. 418.—It "was probably exterminated very soon after the advent of man in the region it inhabited."

1050. *The English sparrow.* By A. L. Child, M.D. *Ibid.*, Nov. 27, 1885, 478.—Chiefly on its spread in the West. "The condemned sparrow seems to be entire master of the position."

1051. *The English sparrow.* By Jos. F. James and G. C. Henning. *Ibid.*, Dec. 4, 1885, pp. 497, 498.—Chiefly on its habits—its driving away native birds, and depredations upon small fruits and pears.

1052. *The English sparrow.* By Ralph S. Tarr. *Ibid.*, Dec. 11, 1885, p. 520.—Advises offering a small bounty for their nests and eggs, etc.

1053. *The English sparrow.* By P. J. Farnsworth and John Nichols. *Ibid.*, Dec. 18, 1885, p. 541.—In defence of the bird.

1054. *The English sparrow.* By Ralph S. Tarr. *Ibid.*, Dec. 25, 1885, p. 563.—Gives an extract from the London 'Academy,' showing how "the bird is viewed in England." The quotation strongly denounces the Sparrow.

1055. *Report of the Ornithological Branch [of the Ottawa Field Naturalists' Club].* By W. L. Scott and George R. White. *Trans. Ottawa Field Nat. Club*, Vol. II, No. 2, 1885, pp. 272-280.—Nine species are added to the list of Ottawa Birds; there are notes on 12 other species, "rare in this locality or recently added to our local list," followed by a list giving dates of arrival birds observed in the spring of 1884.

1056. *Ravages of Rice-Birds.* By Hon. Warner Miller. *Congressional Record*, 49th Congress, June 11, 1886, p. 5747.—A loss of \$6.87 per acre caused by the Rice Birds to the rice crop, and the total annual loss to one plantation is estimated at \$8,250.

1057. *The English Sparrow in the United States.* By Hon. Warner Miller. *Ibid.*, pp. 5747, 5748.—"The indications are that if the English Sparrow is allowed to go unchecked it will not be long before the annual loss of grain and fruit products due to his ravages will be in amount sufficient to pay the interest on our national debt, if not the debt itself. Few persons have any conception of the scourge he has proved wherever he has been naturalized in foreign lands, and he threatens to become a greater pest to the American farmer and horticulturist than the grasshopper, caterpillar, and Colorado beetle."

1058. *Preliminary List of the Birds known to breed on Staten Island.* By Arthur Hollick. *Proc. Nat. Sci. Ass. Staten Island.* Extra No. 4, Dec., 1885.—A nominal list of 67 species, published as a one-page leaflet.

1059. *Diurnal Rapacious Birds. (With special reference to Chester County, Pa.)* By B. Harry Warren, M.D. *Agriculture of Pennsylvania, 1883* (1884), pp. 96-112.—A very important paper on the food of various species of Hawks, with report of numerous examinations of the contents of stomachs.

1060. *Blackbirds' Food. Facts from the Diary of a Field-Working Naturalist, Showing the Piscivorous Habit of two Species of the Genus Quiscalus.* By B. H. Warren, M.D., Ornithologist of the Board [of Agriculture]. *Ibid.*, Rep. for 1885 (1886), pp. 157-159.—Statistics of examinations of stomachs of numerous specimens of *Quiscalus purpureus* and *Q. major*.

1061. *Birds' Food.* By B. H. Warren, M.D. *Ibid.*, pp. 150-156.—On the food of the *Turdus migratorius* and *Mimus carolinensis*.

1062. *The Common Crow Blackbird—Purple Grackle. Quiscalus purpureus (Bartr.).* By B. Harry Warren, M.D. *Ibid.*, 1883 (1884), pp. 214-217.—On its habits and food.

1063. *Die Purpurschwalbe (Progne subis Baird, Purple Martin).* By H. Nehrling. *Der Zoologische Garten, Jahrg. XXVI, No. 1, 1885*, pp. 22-27.—History of the species.

1064. *Der Grünsänger (Dendroica virens Baird. Black-throated Green Warbler).* By H. Nehrling. *Ibid.*, No. 3, pp. 82-85.

1065. *Der Heckensänger, Dendroica pensylvanica Baird, Chestnut-sided Warbler.* By H. Nehrling. *Ibid.*, No. 6, pp. 185, 186.

1066. *Der Wurmsänger, Helmitherus vermivorus Bonap., Worm-eating Warbler.* By H. Nehrling. *Ibid.*, No. 7, pp. 214-215.

1067. *Der Blauflügelige Buschsänger, Helminthophaga pinus Baird. Blue-winged Yellow Warbler.* By H. Nehrling. *Ibid.*, No. 12, pp. 364-366.

1068. *Ein kalifornischer Charaktervogel.* Von H. Nehrling. *Ibid.*, Jahrg. XXVII, No. 3, 1886, pp. 87-90.—An account of the Phainopepla (*P. nitens*).

The present index to minor papers and notes on North American birds was begun in January, 1880, in the first number of the fifth volume of the 'Bulletin of the Nuttall Ornithological Club,' with the heading 'Minor Ornithological Papers,' with the purpose of giving short notices or abstracts of the more important papers and notes relating to American birds, appearing in publications not usually conveniently accessible to working ornithologists, in continuation of Dr. Coues's 'List of Faunal Publications relating to North American Ornithology,' published in his 'Birds of the Colorado Valley' in 1878. The scope of the index was at first limited to notes or papers of special value, particularly those having the character of local lists, or bearing upon the migration or distribution of species, excluding, however, such as were anonymous, or pseudonymous. Later the scope was enlarged to include everything worth citing relating to North American birds, wherever published, unless appearing in journals strictly devoted to ornithology. The compiler is aware that the record must be far from complete, particularly as regards newspapers, but it is believed

to fairly cover the 'Proceedings' and 'Memoirs,' etc., of scientific societies, the literary magazines, papers devoted to field sports, and scientific periodical literature. The number of titles cited already exceeds one thousand and it seems now desirable to give a list (here following) of the principal publications indexed, with references to the volumes and pages of the 'Bulletin' and 'Auk' where these indexes have been published.—J. A. A.

American Entomologist (new ser.) . . . . .	Vol. I	XVII—XX	Bull., V, 1881 . . . . .	Page 53 . . . . .	Titles 132-140.
American Field . . . . .	"	XI, XII	Auk, I, 1884 . . . . .	"	" 188 . . . . .
" American Naturalist . . . . .	"	XII—XIV	Bull., VII, 1884 . . . . .	"	" 212-214 . . . . .
" " . . . . .	"	XV—XVII	Auk, II, 1884 . . . . .	"	" 57-58 . . . . .
" " . . . . .	"	XVIII	Bull., III, 1885 . . . . .	"	" 85-87 . . . . .
" " . . . . .	"	XIX	Bull., IV, 1886 . . . . .	"	" 210 . . . . .
Bull. Buffalo Nat. Field Club . . . . .	I	I, II	Bull., V, 1884 . . . . .	"	" 189-190 . . . . .
Canad. Sportsm. & Nat. . . . .	"	III (pt.) . . . . .	Bull., VI, 1884 . . . . .	"	" 284-285 . . . . .
" " . . . . .	"	IV . . . . .	Bull., VII, 1884 . . . . .	"	" 88-89 . . . . .
Chicago Field . . . . .	X—XII	III . . . . .	Bull., VIII, 1885 . . . . .	"	" 185-186 . . . . .
" " . . . . .	V—VII	IV . . . . .	Bull., V, 1886 . . . . .	"	" 209 . . . . .
Familiar Sci. & Fancier's Journ. . . . .	III . . . . .	V . . . . .	Bull., VI, 1886 . . . . .	"	" 186-187 . . . . .
Field and Forest . . . . .	XII—XIII	VI . . . . .	Bull., VII, 1886 . . . . .	"	" 115 . . . . .
Forest and Stream . . . . .	XII—XIII	XII—XIII, No. 20—XIV	Bull., VIII, 1886 . . . . .	"	" 113-115 . . . . .
Journ. Cincinnati Soc. Nat. Hist. . . . .	IV . . . . .	XII . . . . .	Bull., IX, 1886 . . . . .	"	" 112 . . . . .
Oölogist . . . . .	IV . . . . .	XII . . . . .	Bull., X, 1886 . . . . .	"	" 43-45 . . . . .
Ornithologist and Oölogist . . . . .	IV . . . . .	XVI—XVII	Bull., XI, 1886 . . . . .	"	" 48-50 . . . . .
Quart. Journ. Boston Zool. Soc. . . . .	IV . . . . .	XVIII—XXI	Bull., XII, 1886 . . . . .	"	" 71-100 . . . . .
Rand. Notes on Nat. Hist. . . . .	IV . . . . .	XXII, XXIII	Auk, I, 1884 . . . . .	"	" 142-159 . . . . .
Science . . . . .	IV . . . . .	XXII, XXIII	Auk, II, 1885 . . . . .	"	" 165-182 . . . . .
" " . . . . .	IV . . . . .	XXII, XXIII	Bull., VII, 1886 . . . . .	"	" 115-117 . . . . .
Science News . . . . .	IV . . . . .	IV . . . . .	Bull., VIII, 1886 . . . . .	"	" 116-119 . . . . .
Science Record . . . . .	IV . . . . .	IV . . . . .	Bull., IX, 1886 . . . . .	"	" 285-289 . . . . .
Stearns's Bull. Mass. Nat. Hist. . . . .	IV . . . . .	IV . . . . .	Bull., X, 1886 . . . . .	"	" 659-683 . . . . .
Ward's Nat. Sci. Bull. . . . .	IV . . . . .	IV . . . . .	Bull., XI, 1886 . . . . .	"	" 849-993 . . . . .
Zoölogist . . . . .	IV . . . . .	IV . . . . .	Bull., XII, 1886 . . . . .	"	" 241-258 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XIII, 1886 . . . . .	"	" 171-172 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XIV, 1886 . . . . .	"	" 211 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XV, 1886 . . . . .	"	" 312 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XVI, 1886 . . . . .	"	" 47-48 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., VII, 1883 . . . . .	"	" 173-178 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., VIII, 1883 . . . . .	"	" 234-238 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., IX, 1883 . . . . .	"	" 372-440 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., X, 1883 . . . . .	"	" 60-101 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XI, 1883 . . . . .	"	" 233 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XII, 1883 . . . . .	"	" 172 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XIII, 1883 . . . . .	"	" 202-227 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XIV, 1883 . . . . .	"	" 103-1036 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XV, 1883 . . . . .	"	" 185-189 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XVI, 1883 . . . . .	"	" 210-211 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XVII, 1883 . . . . .	"	" 475-476 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XVIII, 1883 . . . . .	"	" 45-46 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XIX, 1883 . . . . .	"	" 211 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XX, 1883 . . . . .	"	" 200 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXI, 1883 . . . . .	"	" 172 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXII, 1883 . . . . .	"	" 355-371 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXIII, 1883 . . . . .	"	" 103-1036 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXIV, 1883 . . . . .	"	" 570-594 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXV, 1883 . . . . .	"	" 792-805 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXVI, 1883 . . . . .	"	" 1042-1054 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXVII, 1883 . . . . .	"	" 15-18 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXVIII, 1883 . . . . .	"	" 237-240 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXIX, 1883 . . . . .	"	" 207-208 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXX, 1883 . . . . .	"	" 328 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXI, 1883 . . . . .	"	" 447-454 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXII, 1883 . . . . .	"	" 83-811 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXIII, 1883 . . . . .	"	" 776-783 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXIV, 1883 . . . . .	"	" 252-266 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXV, 1883 . . . . .	"	" 995-978 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXVI, 1883 . . . . .	"	" 476, 477 . . . . .
" " . . . . .	IV . . . . .	IV . . . . .	Bull., XXXVII, 1883 . . . . .	"	" 1054-1058 . . . . .

**Edson on the Birds of Chautauqua County, N. Y.**—In a brochure\* of 14 pages Mr. Edson gives an annotated list of 150 species, embracing only such as have come under his own notice during several years of observation in the central part of the County. The author says that many others might doubtless have been added with safety, but he commendably refrains from including them till he can add them authoritatively. The list consequently includes, in the main, only the more common species. Unfortunately the list is greatly marred by typographical errors, for which, however, the author cannot be held responsible, it having been printed, as we are informed, without his revision of the proofsheets. It would be hard to find a worse specimen of printing in respect to the technical names of the species.—J. A. A.

**Shufeldt on the Osteology of *Conurus carolinensis* and *Geococcyx californianus*.**—In a paper† of nearly twenty pages accompanied by two beautiful plates, Dr. Shufeldt has given us another memoir on the osteology of American birds, this time treating of the Carolina Paroquet, a form doubtless soon to be added to the list of species exterminated by man's agency. Besides giving a detailed description of the bones of the skeleton, he adds a convenient synopsis of the skeletal characters of the species.

A second paper‡ of similar character deals with the Road-runner, and is illustrated by three excellent plates. It is needless to say that both papers are valuable contributions to avian osteology.§—J. A. A.

**Publications Received.**—**Allen, J. A.** (1) A Revised List of the Birds of Massachusetts. (*Bull. Am. Mus. Nat. Hist.*, I, No. 7, pp. 221-271.) (2) The Masked Bob-white (*Colinus ridgwayi*) of Arizona, and its Allies. (*Ibid.*, pp. 273-290, pl.)

**Blasius, W.** Beiträge zur Kenntniss der Vogelfauna von Celebes, II. (*Zeitsch. für die ges. Orn.*, 1886, Heft. II.)

**Blasius, R., J. Rohweder, R. Tancré, and A. Walter.** IX. Jahresbericht (1884) des Ausschusses für Beobachtungsstationen der Vögel Deutschlands. (*Journ. für Orn.*, Jahrg. 1886, April-Heft.)

**Edson, John M.** Birds of Chautauqua County, N. Y., 1886, pp. 14. (Jamestown, 1886, Geo. H. Tiffany.)

\* Birds of Chautauqua County. An Address delivered before the Chautauqua Society of History and Natural Science, at its semi-annual meeting held in Jamestown, January 29, 1885. By John M. Edson. Jamestown: Geo. H. Tiffany, 1886. Large 8vo pp. 14.

† Osteology of *Conurus carolinensis*. By R. W. Shufeldt, M.D., Medical Corps U. S. Army [etc.]. < *Journ. of Anat. and Phys.*, Vol. XX, pp. 407-425, pl. x, xi.

‡ The Skeleton in *Geococcyx*. By R. W. Shufeldt, Med. Dept. U. S. Army [etc.]. < *Journ. Anat. and Phys.*, Vol. XX, pp. 244-266, pl. vii-ix.

§ We notice that in our copy of the paper on *Conurus carolinensis* the author has corrected the description of the plate to read *right* pectoral limb, and *right* humerus instead of *left*, respectively, as printed.

**Evermann, B. W.** A List of the Birds observed in Ventura County, California. (Auk, 1886, pp. 86-94, 179-186.)

**Fox, W. H.** List of Birds found in Roane County, Tennessee, during April, 1884, and March and April, 1885. (Auk, 1886, 315-320.)

**Harvie-Brown, J. A., J. Cordeaux, R. M. Barrington, A. G. More, and W. Eagle Clarke.** Report on the Migration of Birds in the Spring and Autumn of 1885. Seventh Report (Vol. II, No. 2). 8vo., 1886, pp. 173.

**Merriam, C. Hart.** (1) Circular on the Food-habits of Birds. (Agricultural Department, Division of Ornithology and Mammalogy, Circular No. 1.) (2) Circular on the English Sparrow. (Ibid., Circular No. 2.) (3) Circular on the Economic Relations of Mammals. (Ibid., Circular No. 3.) (4) Instructions for the Collection of Stomachs. (Ibid., Circular No. 4.)

**Lattin, F. H.** Checking List of North American Birds. 8vo., 1886, pp. 8.

**Meyer, A. B.** Notiz über *Lophorhina minor* (Rams.) und *Euthyrhyncha fulvigula* Schl. (Zeitsch. für die ges. Orn., 1886, Heft. II.)

**Seton, E. E. T.** The Birds of Western Manitoba. (Auk, 1886, pp. 145-156, 320-329.)

**Shufeldt, R. W.** (1) The Skeleton in *Geococcyx*. (Journ. Anat. and Phys., XX, 1886, pp. 244-266, pll. vii-ix.) (2) Osteology of *Conurus carolinensis*. (Ibid., pp. 407-425, pll. x, xi.)

**Warren, B. H.** (1) Diurnal Rapacious Birds. (Agricul. of Penn., 1883 (1884), pp. 96-112.) (2) The Common Crow Blackbird—Purple Grackle. (Ibid., pp. 214-217.) (3) Blackbirds' Food. (Ibid., 1885 (1886), pp. 157-159.) (4) Birds' Food. (Ibid., pp. 150-156.)

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Hoosier Naturalist, I, Nos. 11, 12, II, No. 1, June-Aug., 1886.

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Proceedings U. S. Nat. Mus., 1886, pp. 1-160.

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Young Naturalist's Journal, I, No. 8, July, 1886.

Zoologist, X, Nos. 115-117, July-Sept., 1886.

## GENERAL NOTES.

**Occurrence of the Yellow-billed Tropic Bird in Florida.**—Although this species is common enough in the West Indies, it does not seem to have been observed many times on the mainland of North America, even along the coast of Florida. On this account a specimen, shot April 21, 1886, on Banana River, at the southern end of Merritt's Island, Florida, may be worth recording. I had the bird of Mr. C. J. Maynard, for whom it was collected by a Mr. Peterson. It is a female, in immature and rather ragged plumage. Mr. Maynard tells me that it was captured just after a series of southeast gales.—WILLIAM BREWSTER, Cambridge, Mass.

**The Breeding of Branta canadensis at Reelfoot Lake, Tenn.**—On the 7th of June, 1886, I took a trip to Reelfoot Lake, situated in the extreme northeastern part of Tennessee and distant about twelve or fourteen miles from Hickman, Ky. My first intimation of the breeding of the Canada Goose at that place was while I was waiting for dinner at Mr. Carpenter's, who keeps a hotel for the benefit of persons visiting the lake, and also of himself. While watching some small birds in a tree near the house, I was attracted by the appearance of a flock of six Geese wandering about in the yard, and after looking at them a moment, I said to Mr. Carpenter "Are not those Wild Geese?" "Yes," he said, "I found six eggs on a stump in the lake and brought them home, set them under a tame Goose, and every one hatched." "Why," I said, "I did not know they would breed so far south." "O, yes," he answered, "they breed here every summer." These Geese were tamer than the common domestic Geese, eating out of his hand, etc. They made no effort to get away, though, had their wings not been clipped, they would probably have flown to the lake very soon.

Then after dinner when I was paddling a little plank canoe, a full grown Goose came flying along a little to one side of the canoe. I did not mistake it for any other bird. It was too close for that. I do not think it was hurt or sickly, it flew too swiftly and well for that.

Wishing to have still more proof on the subject, I asked a boy who often goes to the lake to fish and hunt, if he knew that the Wild Geese stayed there all summer. He answered, "Yes, I do. I've seen the young Geese round in the water many a time."

I think these facts go far to prove that the Wild Goose breeds at Reelfoot Lake.—L. O. PINDAR, Hickman, Ky.

**Breeding of the White-faced Glossy Ibis in Florida.**—I have lately obtained from Mr. C. J. Maynard a set of three eggs of the White-faced Glossy Ibis (*Plegadis guarauna*), taken April 18, 1886, at or near Lake Washington (the head of the St. Johns River), Florida. The nest was "in bushes, a few feet from the ground." The identity of the eggs is open

to no doubt, for they are accompanied by the skin of the female parent, which was shot on the nest. Mr. Maynard had the specimens directly from the collector, a young man by the name of Lapham.

If no mistake has been made in the authentication of the alleged eggs of *P. autumnalis* (= *falcinellus*) from Florida (see B. B. & R., Water Birds, Vol. I, p. 96), both species of Glossy Ibis breed together in that State. The *P. guarauna* has not been previously found breeding east of the Mississippi, as far as I can ascertain.—WILLIAM BREWSTER, Cambridge, Mass.

**The Red Phalarope in the District of Columbia.—A Correction.**—In 'The Auk' for January, 1886, the writer noted the occurrence of a Northern Phalarope on the eastern branch of the Potomac River, near Washington, in October, 1885. The statements made at that time regarding the capture and identity of the bird were given on the authority of the collector, Mr. Webster, who then had the specimen. A short time ago the bird in question came into the possession of the National Museum (catalogue number 109,213) and has been identified as a young specimen of the Red Phalarope (*Crymophilus fulicarius*). In making this correction I at the same time add this rare species to our avian fauna.—HUGH M. SMITH, Washington, D. C.

**Ægialitis meloda circumcincta on the Atlantic Coast.**—During a recent hurried visit to the Museum of the College of New Jersey, at Princeton, N. J., I noticed, in looking over the beautifully mounted Scott collection of birds, two specimens, male and female, in adult spring plumage, of the Belted Piping Plover, taken by Mr. W. E. D. Scott at Long Beach, Barnegat Bay, N. J., in April, 1877. On referring to the series of skins two other specimens were found, taken at the same time and place as the above, in which the pectoral band was complete but narrow. The specimens first mentioned above have the pectoral band broad and continuous—typical representatives of var. *circumcincta*.

In the same collection I found also two skins of typical *circumcincta* taken by Mr. Nathan Clifford Brown, on the Scarborough marshes, near Portland, Maine, respectively May 17, 1878, and May 2, 1880. Thus in a series of thirteen specimens of the Piping Plover taken on the Atlantic Coast, contained in the Museum of Princeton College, four were typical of var. *circumcincta*. These specimens appear to have been unrecorded till briefly mentioned by me in the 'Additions and Corrections' to my 'Revised List of the Birds of Massachusetts,' recently published in the 'Bulletin of the American Museum of Natural History,' Vol. I, No. 7.

Mr. Ridgway and Dr. Brewer (Water Birds of North America, Vol. I, 1884, pp. 161, 163) mention this variety as occasionally occurring along the Atlantic Coast, though mainly restricted to the Missouri River region. Mr. Cory (A Naturalist in the Magdalen Islands, 1878, p. 61), however, has recorded it as "abundant" in the Magdalen Islands, and judged it

"possible that its range may extend to *Anticosti, or even to Labrador*," he believing that many of the migrants of this species he saw at the Magdalens came from further north.—J. A. ALLEN, *Am. Mus. Nat. Hist.*, New York City.

**Bonasa umbellus in the Alpine Region of South Carolina.**—The more recent writers on South Carolinian ornithology have regarded the occurrence of the Ruffed Grouse in the State as an open question. While on an ornithological tour to the mountainous portions of Pickens County, during the past summer, I had a good opportunity to learn something of its local abundance and distribution. About Mt. Pinnacle (the highest point in the State, 3,436 feet) and Table Rock (3,000 feet), I found it a common bird, ranging from the valleys of the Saluda and Opoleno up the mountain sides to their summits. Later in the season I traced the 'Pheasant' to the King's Mountain chain (a part of which lies in York County), where, although not common, it is well known to everyone. Several years ago I saw a mounted specimen in the collection of the late Dr. Marshall of Greenville, which was said to have been taken in that county. From the foregoing, it is reasonable to infer that the habitat of the Ruffed Grouse in South Carolina is co-extensive with the Alpine region of the northwestern border counties—a wedge-shaped area, extending from King's Mountain on the east to the Georgia line on the west, having a length of about one hundred and fourteen miles, and a breadth of from eight to twenty-one miles.—LEVERETT M. LOOMIS, *Chester, S. C.*

**The Type Specimen of Colinus ridgwayi.**—In my recent paper on this species (*Bull. Am. Mus. Nat. Hist.*, Vol. I, No. 7, p. 276) I referred to the original type specimen of the Masked Bob-white (*Colinus ridgwayi*) as being in the collection of Mr. F. Stephens. I was subsequently informed that it had been sent to the British Museum, and on the strength of this information added an *erratum* to this effect. I have now learned that the specimen is not in the collection of the British Museum but in that of Mr. G. Frean Morcom, of Chicago, who recently purchased it of Mr. Stephens.—J. A. ALLEN, *Am. Mus. Nat. Hist.*, New York City.

**A Red-headed Black Vulture.**—During my first visit to Charleston, South Carolina, in May, 1883, I was one day watching the Black Vultures which, at certain hours, congregated by hundreds in the streets and on the house tops about the city market, when my attention was attracted to one that differed from all others of its kind that I had hitherto seen in having the entire bill yellow and the bare skin of the head and neck uniformly red, similar to, but of a duller tint than, the head of *Cathartes aura*. That the bird was not a Turkey Buzzard but, on the contrary, either a Black Vulture or something very near it, was evident from its flight and the shape of the wings and tail. I suspected that it might be a hybrid, but there was no way of securing the specimen at the time and I never saw it again.

Through Mr. Wayne's kindness, however, I have just come into posses-

sion of a similar—if not the same—bird taken at the Charleston market in August, 1886. Mr. Wayne bought this specimen for me from the taxidermist who mounted it and who, unfortunately, is able to furnish no precise information respecting the color of the soft parts in life, save that “the head was red like a Turkey Buzzard’s.” In the dried specimen the bill is dull straw-color, the bare skin of the head and neck yellowish-brown, the legs, feet and claws pale brownish-orange. The head and neck are also tinged with purple, but this is evidently the result of a clumsy attempt to reproduce the original color, for the dye has stained some of the feathers as well as a portion of the tow protruding from the eye socket. In all other respects—excepting that the bill is unusually depressed and the fifth primary on each wing white to its base—the bird agrees perfectly with average specimens of the Black Vulture. That it is merely an abnormally colored example of that species is sufficiently obvious, but its peculiarities are certainly at once interesting and curious.—WILLIAM BREWSTER, Cambridge, Mass.

**The Swallow-tailed Kite in Rensselaer County, New York.**—In my collection is a specimen of an *Elanoides forficatus*, mounted by Mr. William Gibson, of Lansingburg, N. Y., who told me that he received the dead bird July 17, 1886, from Mr. Griffin Haight, and that by dissecting the bird he found it was a male. Its plumage is that of an adult, and is in partly worn and moulting condition. Wing, 15.6 inches; tail, 11.6, with fork, 5.6.

Mr. Haight has a little house on a newly cleared acre, in the border of a large wood-lot in the eastern part of the town of Pittstown, about sixteen miles northeasterly from the city of Troy, and there breeds fancy fowls which run about freely in the clearing and adjacent woods. He informs me that Hawks trouble his fowls and carry off some chickens, and on the morning of July 16 he staid at home to clean out a few of the Hawks, and had shot three, and just fired at another, when he was surprised to see, flying up from the woods by the clearing, a Swallow-tailed Kite, such as he had formerly seen in South Carolina. The Kite flew away and was gone about twenty minutes when it came down and lit on the dead stubby top of a tree by the clearing. After a few minutes, it flew up out of sight, but in about thirty minutes came down again and sat on the same dead tree-top for about seven minutes; it then flew up again out of sight. About fifty minutes later, two Kites came down together and lit on the same dead tree stub. As he started toward them the largest Kite flew away in a flash, and as he went nearer the other Kite darted up overhead; he fired and killed it, and sent the dead bird to Mr. Gibson to be mounted.

Mr. Haight informs me that he has since seen one or more of the Kites around a pond in a swamp of about four hundred acres, within two miles of his house; once on July 29, and several times on August 9. He also saw at a distance, on dead ash trees standing in the swamp, three or four birds having the appearance and flight of Kites, and they alighted like

young birds. He also observed one of the Kites about twenty rods off, sitting on a stub in the pond, in the latter part of August. He also tells me that on August 30, on higher ground, within a mile of his house, two of the Kites flew past him within fifty yards, and afterward coursed about together low over a field of buckwheat, as if catching insects. One of these Kites had a very long and deeply forked tail, and was larger than the other, which had its tail but little forked or nearly even at the end. Two other persons told me about seeing one or two of the birds at or near the same place.

From seeing the locality, and from the information received, it seems probable that a pair of Swallow-tailed Kites bred, in 1886, in Rensselaer County, N. Y., at about latitude  $42^{\circ} 53'$ , longitude  $73^{\circ} 33'$ , and near 600 feet above tide water level.—AUSTIN F. PARK, *Troy, N. Y.*

**The Barn Owl at Englewood, N. J.**—At about six o'clock on the morning of August 26, near the centre of a tolerably dense wood, I started from its roost of the previous night, a bird I was unable to identify, and which eventually escaped me. The ground and bushes beneath the tree from which it had flown were spattered with its droppings, some of them not yet dry, and here a number of feathers were found, undoubtedly shed by the bird which had passed the night above. These feathers, the basal half of a primary, a covert from either wing, and a number of smaller ones, were forwarded to Dr. A. K. Fisher at Washington, who has kindly identified them as the feathers of a Barn Owl (*Strix pratincola*).—FRANK M. CHAPMAN, *Englewood, N. J.*

**Carnivorous Propensities of the Crow (*Corvus americanus*).**—My neighbor, Mr. E. M. Davis, indulges in the luxury of live pets, and amongst them is a Crow, reared by hand from the nest and now perhaps three or four months old. He manifests the usual inquisitive and mischievous habits of the species in confinement, secreting various objects for which he can have no possible use, and worrying on all occasions both the cat and the dog of the premises, by picking at their toes, pulling their tails, etc. He seems to fear nothing but a small rubber hose used for sprinkling purposes, upon the first appearance of which, even before any water was thrown, he manifested the utmost fright, and fled to the house and his master for protection; this he has repeated whenever the hose appears. Query: Is it a case of hereditary fear of *snakes*? Quite recently a young House Sparrow (*Passer domesticus*), not fully fledged, was captured and taken into the happy family, pains being taken to keep it away from the *cat*, but not from the *Crow*, which, at its first introduction, pounced upon it savagely, seized it by the neck, shook it as a terrier does a rat, and before it could be released the Sparrow had gone the way of all birds; portions of it being eaten by its destroyer. As the Crow had been well fed, on a diet embracing meat, grain, and vegetables, the killing of the Sparrow would seem to have been the outcome of natural propensities rather than the result of the pangs of hunger.—F. W. LANGDON, *Cincinnati, Ohio.*

On the Absence of *Ammodramus lecontei* from Chester County, South Carolina, during the Winter of 1885-86.—Mr. Brewster's mention, in the July number of 'The Auk,' of the capture of an example of Leconte's Sparrow in the lower section of the State, during the past winter, is of special interest, owing to the fact of its apparent absence in the vicinity of Chester C. H., where it has been a common and regular visitor for several winters past. Being desirous of fixing the date of its arrival, I began to look for it during the latter part of October, and continued my search with great thoroughness through the entire winter, but not a single specimen was seen. The early part of the season was unusually mild, and the Grasshopper Sparrow was found up to the 14th of December—an incident hitherto unnoted in the Piedmont region. January brought the severest weather known for years. As the Arctic wave came from the northwest, giving a temperature  $10^{\circ}$  lower in Chester than in New York, I expected Leconte's Sparrow with confidence, and kept constantly afield, but without success. It is worthy of remark that during this peculiar stress of weather the Horned Larks and other boreal birds, which frequently favor us with their presence during protracted cold, were wholly wanting.—LEVERETT M. LOOMIS, *Chester, S. C.*

Occurrence of *Ammodramus caudacutus nelsoni* in Massachusetts.—The Nelson's Finch was originally described by Mr. Allen, from near Chicago, and has been supposed to be strictly confined, in the breeding season, to fresh water marshes. Recently Mr. Ridgway has called my attention to specimens of this race from the salt marshes of Cambridge, Mass., which raise some interesting questions in regard to this form. The specimens are three in number, collected by myself as far back as 1871. Two were taken October 7, and their occurrence at this season, though interesting as adding a new bird to the Massachusetts list, need not occasion surprise, since the bird has been taken frequently near Sing Sing, New York, by Dr. Fisher, and is known to occur elsewhere on the Atlantic coast during the fall migrations.

The third specimen, however, occupies a different status. It was taken May 31, the lateness of which date would seem to preclude the possibility of it being a migrant. In fact, if I am not mistaken, I took eggs, supposed them to belong to *caudacutus* proper, on the very day in question.

The specimen appears on comparison to possess all the characteristics of the inland race, and though not so typical as some examples from Chicago, is scarcely to be distinguished from others.

The occurrence of this single specimen on the coast at this season may of course be entirely accidental. The bird may have drifted in, and finding the locality to its liking, may have remained to breed, mating perhaps perfecly with one of the coast form. Those having Sharp-tailed Finches in their collections will do well to examine their series thoroughly with view to the elucidation of the status of the two forms.—H. W. HENSHAW, *Washington, D. C.*

**Occurrence of Chondestes grammacus about Washington, D. C.**—Up to date our knowledge of the occurrence of the Lark Finch in the neighborhood of Washington is limited to the capture of a single specimen by Mr. Roberts, August 27, 1877, and the observation of two individuals in the Smithsonian grounds, during the summer of the same year. To the above is to be added the capture of a second specimen, an adult male, August 8, 1886, by the writer. There is nothing in the nature of the capture to indicate that the bird was not an 'accidental.'—H. W. HENSHAW, *Washington, D. C.*

**Lincoln's Sparrow and the Blue-gray Gnatcatcher in Connecticut.**—I have recently examined a female *Melospiza lincolni* taken at East Hartford, Conn., Sept. 21, 1885, by Mr. Willard E. Treat. It was accidentally killed when shooting *Geothlypis trichas*. He writes that on April 24, 1886, he winged another of these Sparrows but did not capture it. It was in thick brush and extremely shy.

May 7, 1886, Mr. Treat killed a female *Polioptila caerulea* at East Hartford. It was on the top of a high willow. This is, I believe, the third recorded capture of this Gnatcatcher for Connecticut.—JNO. H. SAGE, *Portland, Conn.*

**The Evening Grosbeak in Wisconsin.**—I am glad to record the capture of a male specimen of the Evening Grosbeak (*Hesperophona vespertina*) at DePere, Wis., Nov. 28, 1885. This is the first authentic occurrence of the species in Brown County.—SAMUEL WELLS WILLARD, *DePere, Wis.*

**First Plumage of the Summer Tanager (*Piranga rubra*).**—Underparts whitish-buff, heavily streaked on breast with dusky; throat and abdomen with lighter and more linear streaks of the same. Under tail-coverts reddish-buff with dark streaks. Head and upper parts dark brownish buff thickly spotted and streaked with dusky. Wings showing traces of dull red and green on primaries and secondaries. The first and second wing-coverts tipped and edged with buff, forming two distinct wing-bars.

The bird (No. 2084, ♂, Coll. C. W. Beckham), from which the above description is taken, was shot at Bardstown, Kentucky, on June 21, and was attended by both parents.

The call-note of the young Tanager is very different from any note of the adult birds. It is very full and sonorous and faintly suggestive of the Bluebird's ordinary whistle.—CHARLES WICKLIFF BECKHAM, *Bardstown, Ky.*

**Two additional Massachusetts Specimens of the Prothonotary Warbler (*Protonotaria citrea*).**—At the time of recording\* the Prothonotary War-

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\* Auk, Vol. III, July, 1886, p. 410.

bler taken May 9, 1886, I had no idea that I should ever shoot another in Massachusetts. During the following August, however, I took two more in Concord, one August 17, on the banks of the main river about a mile below the town, the other August 23, on the Assabet, within fifty yards of the spot where the first (May) specimen was obtained. The first of these August birds was a young female, the second an adult male; both had completed the summer moult and perfected the autumnal plumage. I saw and fully identified each on the day before it was shot, Mr. Purdie being with me on one occasion (Aug. 22) as well as examining the freshly-killed specimen next day.

Both birds were restless and rather shy, flitting from place to place, frequently crossing and recrossing the narrow stream. For the most part they kept well up in the trees, seeming to prefer the denser foliated ones, especially the swamp oaks (*Quercus bicolor*) among the broad, dark leaves of which they concealed themselves so successfully that I had the greatest difficulty in getting even a glimpse at them. They seemed perfectly at home in their strange surroundings, as indeed they might well be, for both the Concord and Assabet Rivers, with their densely-wooded banks and half-submerged thickets of black willows and button bushes, afford plenty of just such places as the Prothonotary delights in at the South and West.

Viewed in the light of this later experience the status of the Prothonotary Warbler as a Massachusetts bird presents an interesting problem. The May specimen, considered apart, might be consistently treated as a chance straggler from the South, especially as it occurred just after a storm which prevailed along our entire eastern coast; but the appearance of two others, one of them a young bird, in the same locality, at the height of the return migration, seems to indicate that during 1886, at least, there has been a regular, if limited, flight into and from New England, and that the species has actually bred either within or to the northward of this region. That such a visitation is of annual recurrence is more doubtful, but it is certainly not impossible, especially when we consider that the Prothonotary is a bird of peculiar habits and tastes, and that the haunts which it loves are, in this region, neither numerous nor often visited by collectors.

—WILLIAM BREWSTER, Cambridge, Mass.

**An Earlier Occurrence of the Prothonotary Warbler in Massachusetts.**—In the last issue of 'The Auk' my friend Mr. Brewster, announces his taking a *Protonotaria citrea* in Concord, very properly considering it the first for the State, and I am aware that he will in the October number record his capture of two more in the same town, one of which I had the great pleasure of seeing alive as well as afterwards handling in the flesh. Let me note a fourth specimen that I have seen in the possession of Mr. George Dwelley. He assures me that he shot the bird, a male, from the foliage overhanging a creek, it falling into the water. This was in spring, several years ago, but not previous to 1880, in the town of South Abington, Plymouth County.—H. A. PURDIE, Boston, Mass.

**The Carolina Wren in Connecticut.**—Mr. Willard E. Treat writes me that he took a male *Thryothorus ludovicianus* at East Hartford, Conn., March 18, 1886. It was in good condition, and had been seen since February 15 among some thick brush and tall weeds. This is, I believe, the third capture of this bird in Connecticut.—JNO. H. SAGE, *Portland, Conn.*

**The Red-breasted Nuthatch in Kentucky in Summer.**—On July 16, while 'taking my ease' in a hammock, I saw a small bird skipping about the uppermost branches of an adjacent pine tree. Not being able to identify it, my ever-ready .22 cal. cane-gum was brought into requisition, when down came a Red-bellied Nuthatch (*Sitta canadensis*). Its presence at this latitude ( $37^{\circ} 52'$ ) and altitude (650 feet above tide-water) at this season of the year is very singular, and remains to be explained. Upon dissection the bird proved to be a female. The ovaries were much contracted but plainly discernible.—C. W. BECKHAM, *Bardstown, Ky.*

**Singular nesting site of Wilson's Thrush.**—It has long been a problem as to what use could be made of the old tin cans that fruits and vegetables have been preserved in, but it is now partially solved by a pair of Wilson's Thrushes choosing one to place its nest in. My two sons in passing through a piece of woods where this species is quite common, boy-like, kicked an old can lying on the ground when, to their astonishment, they made the discovery that it contained a nest and three eggs of the above species. The can rested on its side, the birds going in through a small hole in the cover (the entire end not having been cut). The nest was very wet and the eggs were addled, evidently having been deserted, owing to the heavy rains in early June. Unfortunately one egg was broken and the other two badly damaged, but the nest is perfect and the materials are typical of this species.—H. B. BAILEY, *South Orange, N. J.*

**The Eastern Bluebird at Fort Lyon, Colorado.**—Four Eastern Bluebirds (*Sialia sialis*), two of each sex, were first seen here May 24 of this year. One male I collected, one female was killed by a cat. I found the nest of the other pair June 25. The young were then two-thirds grown. Old birds and young left July 14. The late arrival and nesting of these birds at this place where, during the four years I have been stationed here none have been seen, seems unusual.

*S. arctica* is abundant about the middle of March, but stays a few days only. *S. mexicana* is not found here.—P. M. THOME, *Capt. 22nd Inf., Fort Lyon, Col.*

**Three Interesting Birds in the American Museum of Natural History:** *Ammodramus leconteii*, *Helinaia swainsonii*, and *Saxicola cenanthe*.—As is well known, Le Conte's Sparrow was described by Audubon (Birds of America, VII, p. 338, pl. 488) in 1843, from a specimen obtained on the Upper Missouri. Audubon says: "Although we procured several

specimens of this pretty little Sharp-tailed Finch, I have at present only one by me, a fine male, however, shot by Mr. J. G. Bell, of New York, on the 24th of May." He gives its habitat as "Upper Missouri prairies. Common." Professor Baird, in 1858, says (Birds of North America, 1858, p. 452) : "I am obliged to copy the description of this rare Sparrow from Mr. Audubon, as I have no skin at hand. The type of the species was presented to me by Mr. Audubon, but it has somehow been mislaid." In the 'History of North American Birds' (Vol. I, 1874, p. 552) a second specimen is recorded as having been "received by the Smithsonian Institution from Washington Co., Texas, collected by Dr. Lincecum," but "in very poor condition, having been skinned for an alcoholic preparation and does not admit of a satisfactory description of the colors." This, then, was the only specimen known to be extant when the species was re-discovered in 1873 by Dr. Coues, "near Turtle Mountain, on the border of Dakota, latitude 39°," where a number were found together on August 9—the only occasion when they were noticed. The subsequent remarkable history of this long lost species need not be recounted, it having been found of late in numbers from the Upper Missouri region to as far south and east as South Carolina.

A specimen in the Maximilian Collection in the American Museum of Natural History, New York City, proves that a second specimen was really extant during this long interval. It still bears the original label in the handwriting of the Prince, as follows: "Ammodramus LeContei Audub. (Emberiza Audub.) Missouri. Mas." In the manuscript Catalogue of the Maximilian Collection (p. 171, genus 515, sp. 3) it is recorded as follows: "[Coturniculus] Lecontei Audub.: Bp.; (Ammodramus Lecontei Gray). Nord America, am oberer Missouri." There is no further clue to its history, but doubtless it was taken by the Prince on his North American journey, 1832-34, and hence some ten years before the discovery of the species by Audubon. As the Maximilian Collection was transferred to the American Museum in 1870, this specimen was in New York City for three years prior to the re-discovery of the species by Dr. Coues.

The specimen (No. 1916) is in an excellent state of preservation, though doubtless taken not less than half a century ago.

Another specimen of historic interest in the collection of the American Museum of Natural History is one of the original Bachmanian specimens of Swainson's Warbler (No. 25.348). This is from the Elliot Collection, Mr. Elliot having received it from Professor Baird.

A third specimen, of much local interest, is an example (No. 1236. ♀ ad.) of a Wheatear (*Saxicola axanthe*), from the collection of Mr. D. G. Elliot, taken on Long Island, N. Y., but the date of capture is not given. It appears not to have been previously recorded.—J. A. ALLEN, Am. Mus. Nat. Hist., New York City.

**Four Rare Birds in Northern California: Yellow Rail, Emperor Goose, European Widgeon, and Sabine's Ruffed Grouse.**—While on the coast of Northern California in December, 1885, I visited the ornithological col-

lections of Mr. Charles Fiebig, who lives at Eureka, on Humboldt Bay. As Mr. Fiebig had informed me upon my arrival, that all his birds had been shot in the vicinity of Humboldt Bay, I was surprised and interested to find in his collection specimens of the Yellow Rail, the Emperor Goose, the European Widgeon, and Sabine's Ruffed Grouse, which I saw at once were rather extra-limital species, particularly the first two. Mr. Fiebig's account of these was as follows (transcribed from my note book):

**Porzana noveboracensis.** One specimen 1884, shot on the marsh at the mouth of Freshwater Creek, flowing into Humboldt Bay. A pair were seen but only one secured.

**Philacte canagica.** One specimen obtained on the bay in the winter of 1884. Others seen at long intervals.

**Mareca penelope.** One specimen shot on the bay in the winter of 1884. The only record of its occurrence there, according to Mr. Fiebig and the sportsmen of Eureka.

**Bonasa sabinii.** Only one specimen in the collection, but met with on several occasions in the deepest portions of the surrounding redwood forest.

Mr. Fiebig, now a very old man, is a German who came to America about 1850, and worked at his trade of wagon-making, in the city of Washington, until the war broke out, when he enlisted in the Union Army, and afterward settled in California. While living in Washington he became acquainted with North American birds by studying the Smithsonian collections. He is a taxidermist of far more than ordinary ability, but practices the art only as a pastime. His method of mounting is unique; after removing the skin, he carves a model of the bird's body in soft wood, with great exactness. The effigy is then covered with the skin, and the bird, after the eyes are added, is complete. I am bound to say that this is done with the skill of an artist, and the results secured by this method are excellent. Mr. Fiebig gave me an interesting account of his experiences as a Duck hunter on the shores of the Baltic Sea, when a boy.—CHAS. H. TOWNSEND, *Smithsonian Institution, Washington, D. C.*

## CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

### The Classification of the Macrochires.

[SECOND LETTER.]

TO THE EDITORS OF THE AUK:—

Sirs: If the valuable space in the section reserved for your correspondence will admit of it, I have a few words to say in regard to the criticism passed upon my classification of the Macrochires, so far as I defined

it in my contribution to the 'P. Z. S.' (1885), by Doctor Stejneger in the July number of 'The Auk.'

Dr. Stejneger asks, "Is it possible that Dr. Shufeldt has overlooked the *many* points in which Swallows and Swifts disagree outside of the skeleton?" To this I can answer that I duly took into consideration all of those characters, both internal and external, now generally known to us, when I came to draw up my conclusions in the 'P. Z. S.' memoir, wherein, as the Doctor remarks, the skeletal characters alone appear to have swayed me in my decisions. I am not only conversant with the "*many points*" of difference existing between Swallows and Swifts, but am becoming more convinced every day of the '*many, many points*' of structural difference existing between the Trochili and Cypseli.

Further along in his criticism, when reviewing for my benefit some of the more prominent differences existing between the Swallows and Swifts, as Dr. Stejneger comprehends their structure, he contends that "internally they differ in a great number of points, but we shall only mention that the Swifts have a sternum, while the Swallows have the manubrium bifurcate and the posterior border deeply two-notched." Reading this sentence over carefully a number of times I must confess that its author does not make quite clear to my mind the kind of comparison he wishes to institute between the sternum of a Swift and a Swallow. No one probably will deny "that the Swifts have a sternum," though many might take exception to the remark that that bone was "two-notched" in the Swallows. To be sure it has *a pair* of notches in its xiphoidal extremity; but as generally described, the two-notched sternum is seen in such forms as *Picus*.

Again, Dr. Stejneger asks me in his criticism, "but what differences are there in the Swifts' flight from that of the Swallows' that should have caused such a remarkable modification towards the Humming-birds?" (p. 406). My answer to this question will also constitute a reply to the two succeeding questions of my critic, as it will, I hope, still further impress upon the minds of systematists the warning, already given in my 'P. Z. S.' memoir, that the similarities of certain structures existing between the Cypseli and Trochili are for the most part due to the modification of these structures gradually brought about by the habits or actions of the forms in question. Surely Dr. Stejneger would never have asked the question I have first quoted from him if he had ever had the opportunity to compare in nature the flights of two such birds for example as *Micropus melanoleucus* and *Tachycineta thalassina*. Many a time have I stood in the deep, rocky cañons of New Mexico, and seen one of the former birds pitch down from its dizzy position in the air above, with a velocity that taxed the very eye of the observer to follow, to its nest in the side of the precipice below; check itself suddenly at its entrance; hover for an instant, like a Hummingbird over a flower, with its wings in rapid motion, then enter,—to be gone but a moment,—when it makes its appearance again as if shot from a gun, to be off with the swiftness of the bullet. How different is all this from the flight of the pretty little Violet-green Swallow, with its slight and easy motion, rarely hurried and never precipitous!

Anatomists have long known that in avian forms, such as the Cypseli and Trochili, wherein the powers of flight have through time been brought to great perfection and capable of a high degree of velocity, that it is necessarily accompanied by corresponding modifications of structure, such as a deepening of the sternal keel, and changes "in the shape of the humerus and its processes," as remarked upon by Dr. Stejneger. That the *corresponding* "processes" have become more conspicuous is not to be wondered at when we think for a moment and take into consideration the fact that they probably *have been acted upon by the corresponding muscles involved in the flight*. In other words, when we come to sift out the characters wherein the Cypseli and Trochili *principally* agree we find them to be just such ones as I have elsewhere pointed out, and in each instance are found to be structural characters, the modifications of which are due to similar habits of the forms in question, but this by no means satisfies my mind that the groups should be, or are closely affined. I think sometimes taxonomists too often lose sight of the lines of descent of the class Aves in time, and in their eagerness to show relationship of the remnants of existing forms or groups in recent times, overlook the great gaps that probably exist among the twigs of the branches and stems that represent the tree of their pedigree.

Notwithstanding Dr. Stejneger's warning against placing too much reliance upon the skeletal characters for our guidance, I must still insist that the characters (as we find them in forms which we are comparing) of the skull and axial skeleton are among the most reliable if not *the* most reliable we have. If there be better ones in any vertebrate organization I have not been so fortunate as yet to have met with them. If I find that the number of *vertebræ* constantly differed in any two birds, and their skulls are of a radically different type, why I would no more be swayed from my opinion that they were members of a different order, as orders are regarded in ornithology, than I could be brought to the belief that anatomical characters are valueless in taxonomy. Certainly finding an additional pair of primaries or secondaries in the wing, in either case, would have but little weight towards altering my first opinion, based as I say, on what I had found in the cranium and column. Now to take the skull of a Swift and a Hummingbird as an example, *all*, absolutely *all*, of the leading characters as we find them in the representatives of these two groups are at variance while quite a number of these characters agree in this part of the skeleton with the Swallows and Swifts, and others can easily be shown in the latter birds to be demonstrable departures due, probably, to unknown causes from the typical passerine ones.

Since the appearance of my memoir in the 'P. Z. S.' a considerable amount of material (Macrochires) has come to my hands, thanks to some of the members of the A. O. U. and associate members, and others. A superficial examination of some of this but satisfies me of the correctness of my first conclusions, and if those conclusions are to be modified at all it will be in regard to the Swifts, which I think can be shown to be a group of birds also entitled to a separate order, as orders go in systematic ornithology,

as well as the Trochili and Caprimulgii. This order Cypseli would stand between the Trochili and Passeres, but as I am soon to have my second contribution to this subject in hand, all such questions will therein be considered.

I have a large collection of alcoholics now at my disposal, and am only waiting to secure a better assortment of the Nightjars and Trogons before undertaking the work, or rather pushing it, as many of the drawings are already completed.

In the mean time, permit me to say to those who may be interested in this subject that I deem it quite a possible thing that an offshoot may have taken place from the common stock Passeres, near the Swallows, as would in time have produced our typically modern Swifts. I can picture how these forms at first may have had some change in their environment as demanded an increase of the power of flight. This would demand an increase of the power of the muscles involved therein, and finally we would find just such changes in the bones to which these muscles are attached as we in reality do in existing Cypseli. So that the enlarged pectorals, the deep keel to the sternum and its unnotched xiphoidal extremity, the short humerus of the arm, with its conspicuous processes, are all examples of *physiological adaptations of structure*. So there may have come down to us an entirely different group of birds, as the Hummers, of very different origin, which group may have had the same factor thrown into its environment, somewhere in time, that demanded an increase in the power of flight, and as a consequence we find a similar modification of the parts involved. But when we come to critically examine and compare the modified parts we may find, as we do in the case of the Hummers and Swifts, that although the *same end* has been very prettily arrived at by the changes in the structures, yet at the same time quite *different forms* of the several and corresponding parts had been the result of it all. The first comparison, with the views of pointing out the relationships of such, and existing groups, wherein the fundamental characters are masked by such deceptive similarities, constitute some of the most difficult problems of systematic zoölogy. In the comparisons, it is by no means necessary to eliminate them, but simply we must be guided in our conclusions by what the *sum of all* the morphological characters of the forms under comparison go to show.

It is really no valid reason that we should retain in the same *order*, were vessels so classified, two kinds of them, simply because they might both happen to possess "deep keels" and "short shafts" connecting their wheels with their motive powers, for one of these vessels might be driven by steam and the other by some other force, notwithstanding the fact that one might show an additional blade or two in either of its wheels (wings) or perhaps have a different style of rudder (tail), and yet the fundamental differences be very great and justify us in widely separating them in any scheme of classification.

In conclusion I must express my satisfaction at finding one who has perhaps thus far devoted his best energies in avian taxonomy to the con-

sideration of external characters and obscure points in synonymy, as Dr. Stejneger has so ably done for us, expressing himself as he does in the criticism of my memoir by saying, "A natural system cannot be based upon one single set of characters; all will have to be carefully considered, whether they are external or internal, before we can hope to understand the true relationship of the different groups" (p. 406). This is precisely, indeed the words are quite the echo of, what I have taught, and my sentiments for a number of years past, as the reader may see by referring to the leading paragraphs in my "Osteology of the Cathartidæ," published in 1883 in Hayden's Twelfth Annual, by the Department of the Interior.

Very respectfully,

*Ft. Wingate, New Mexico,*  
4th August, 1886.

R. W. SHUFELDT.

**ERRATUM.**—In Dr. Shufeldt's letter in the July 'Auk,' p. 414, for "nine," in the first line of the letter, read mine.—**EDD.**

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### NOTES AND NEWS.

THE NEXT meeting of the American Ornithologist's Union will be held in Washington, Tuesday, November 16, and following days. A very interesting meeting is anticipated, and a much larger attendance than usual of both Active and Associate Members is expected. The meeting will be chiefly occupied with the reading and discussion of scientific papers. There will be in addition the usual reports of committees.

DR. F. W. LANGDON, of Cincinnati, has in preparation a work on 'Ohio Valley Birds,' which he hopes to have soon ready for the press. It will be devoted to the birds of the region drained by the Ohio River and its tributaries. Besides some matter relating to ornithology in general, it will include descriptions and life histories of Ohio Valley birds.

A 'MANUAL of North American Birds,' by Mr. Robert Ridgway, is announced as in press, to be published by J. B. Lippincott and Co., of Philadelphia. The work will be abundantly illustrated and, it is needless to say, most carefully and thoroughly prepared.

DR. LEONHARD STEJNEGER announces his intention (Proc. U. S. Nat. Mus., 1886, p. 99) "to write a comprehensive and reliable guide to Japanese ornithology, with ample descriptions of all the known forms from original Japanese specimens." Finding his material for the work still incomplete he earnestly requests assistance in gathering it, in order to enable him to satisfactorily fulfil the task he has undertaken. The work will be based primarily on the Blakiston and Jouy collections of Japanese

birds in the National Museum, which is desirous of obtaining by exchange specimens necessary for the elucidation of the Japanese Avian fauna. Specimens loaned to Dr. Stejneger in aid of his work will be returned as soon as possible without expense to the owner.

THE Division of Economic Ornithology and Mammalogy of the U. S. Department of Agriculture, Dr. C. Hart Merriam, Chief of the Division, has issued four circulars in reference to the work of the Division. No. 1 is in relation to the 'Food-Habits of Birds'; No. 2 is 'On the English Sparrow,' and is accompanied with a 'Schedule' of inquiries; No. 3 is 'On the Economic Relations of Mammals'; No. 4 is 'Instructions for the collection of Stomachs,' of both birds and Mammals. Dr. Merriam's chief scientific assistants are Dr. A. K. Fisher and Prof. Walter B. Barrows, the latter recently instructor in Natural History at the Wesleyan University, Middletown, Conn.

THE A. O. U. Committee on the Protection of North American Birds has resumed its meetings, and proposes to issue soon a short Bulletin on the subject of its work, with special reference to legislation in behalf of the birds.

PROFESSOR Eugen von Boeck, Director of the Central School of Bolivia, member of the International Ornithological Committee, and a naturalist who for thirty years has devoted much time to the study of the natural history of South America, died on the 30th of January, 1886, in Cochabamba, after a single day's illness from a choleraic attack. His researches were mainly ornithological, and as early as 1855 he published in 'Naumannia' a paper on the birds of Bolivia. His last contributions were papers on the birds of the valley of Cochabamba, published in the 'Mittheilungen des ornithologische Vereins in Wien' in 1884. At the time of his death he was engaged upon a translation of Taczanowski's 'Ornithologie du Pérou.' He was also the author of numerous briefer ornithological communications. Notwithstanding many other pressing engagements, he devoted much time for many years to the study of South American ornithology.

## SUPPLEMENT.

DESCRIPTIONS OF THIRTEEN NEW SPECIES OF  
BIRDS FROM THE ISLAND OF GRAND  
CAYMAN, WEST INDIES.

BY CHARLES B. CORY.

***Certhiola sharpei*, sp. nov.**

SP. CHAR.—Throat ash gray, darker than in *C. caboti*, or *bahamensis* but much lighter than *flaveola*; underparts yellow, brightest upon the breast and dullest with a slight olive tinge on the belly and flanks; top of the head and stripe through the eye dull black; superciliary stripe white; back dull black showing an ashy tinge; rump yellow; quills dark brown, edged with white; carpus edged with bright yellow; tail tipped with white, heaviest on the outer feathers; bill and feet dull black.

Length, 4.10; wing, 2.45; tail, 1.80; tarsus, .80; bill, 52.

HABITAT. Island of Grand Cayman, West Indies.

I take much pleasure in dedicating this species to Mr. R. Bowdler Sharpe, of London, England.

***Dendroica vitellina*, sp. nov.**

SP. CHAR.—Somewhat resembling *D. discolor* in general appearance but larger and having the entire underparts bright yellow with no black streaks on the sides but showing traces of olive on the sides and flanks. Upper parts dull green, pale yellowish green on the rump; quills dark brown edged with pale yellowish green on outer webs; inner webs edged with dull white; a distinct wing-band of yellow; tail-feathers edged with yellowish-green on the outer webs; two outer feathers heavily marked with white on the terminal portion of the inner webs, narrowly showing on the third feather; a superciliary line of bright yellow nearly if not quite reaching the occiput; bill horn color; feet dull black.

Length, 4.30; wing, 2.50; tail, 2.10; tarsus, .70; bill, 50.

HABITAT. Island of Grand Cayman, West Indies.

***Chrysotis caymanensis*, sp. nov.**

SP. CHAR.—Resembles *C. leucocephalus*, but differs from that species greatly in the markings of the throat and head; forehead dull yellowish white, not reaching the eye; feathers of the head bluish green, tipped and edged with dull black; cheeks bright crimson red, the feathers mixed

with green in some specimens; throat pale red, the feathers broadly edged with yellow; underparts bluish green, marked with dull red on the sides and belly; the feathers of the breast and belly edged with dull black; quills heavily edged with blue on the outer webs, inner webs dark brown; tail yellowish green, the outer web of outer feather pale blue, the basal portion of inner webs heavily marked with dark red.

Length, 11; wing, 8; tail, 5; tarsus, .70; bill, 1.05.

HABITAT. Island of Grand Cayman, West Indies.

### *Colaptes gundlachi*, sp. nov.

SP. CHAR.—Resembles *Colaptes chrysocanulus* but is smaller, the yellow of the quills and tail much brighter; under surface of outer tail feathers distinctly banded; feathers of the rump white, heavily blotched with black; shafts of the quills and tail very bright yellow; first primary much longer than in the Cuban species.

Length, 8.90; wing, 5.20; tail, 4; tarsus, .85; bill, 1.10.

HABITAT. Island of Grand Cayman, West Indies.

I have dedicated this species to Dr. John Gundlach, the well known ornithologist, of Ingenio Fermina, Cuba.

### *Engyptila collaris*, sp. nov.

SP. CHAR.—Forehead dull white; top of the head dark gray, showing a metallic tinge of purple on the nape; a cape of metallic purple showing greenish red reflections where it joins the back; back dark brownish olive; throat dull white; breast dull vinaceous, shading into dull white on the belly; sides dull red brown; under wing-coverts and under surface of wing rufous brown; primaries brown, having the inner webs heavily marked with rufous brown; tail slaty brown, two or three outer feathers tipped with white; feet red; bill black; iris dull white.

Length, 9.50; wing, 5.75; tail, 3.50; tarsus, 1.25; bill, .75.

HABITAT. Grand Cayman, West Indies.

### *Zenaida spadicea*, sp. nov.

SP. CHAR.—General upper plumage dark olive brown, rufous brown on the forehead and showing a tinge of very dull purple on the crown, apparently wanting in some specimens; a sub-auricular spot of dark metallic blue; sides of the neck and nape rich metallic purple; chin pale buff, shading into rich rufous chestnut on the throat and breast; belly brown, showing a slight vinaceous tinge; upper surface of tail brown, the feathers showing a sub-terminal band of black, and all the feathers except the central ones tipped with gray; primaries dark brown, almost black, faintly tipped with dull white; the secondaries broadly tipped with white; under wing-coverts gray; bill black; feet red.

Length, 9.60; wing, 6; tail, 3.75; tarsus, .75; bill, .50.

HABITAT. Grand Cayman, West Indies.

**Centurus caymanensis, sp. nov.**

SP. CHAR. *Male*.—Forehead and sides of the head white; crown and nape bright crimson red; a tinge of red at the nostrils; throat dull white, shading into brownish white on the breast and belly; a patch of crimson red at the vent; back banded with dull white and black; rump dull white, marked irregularly with black; quills dark brown, heavily blotched with white on the basal portion of the inner webs; secondaries and some of the inner primaries heavily marked with white; tail brownish black, faintly tipped with tawny brown, the outer pair and two central feathers blotched with dull white; bill and feet black.

The female is similar to the male, but lacks the red crown, having only a nuchal patch of that color.

Length, 8.60; wing, 5; tail, 4; tarsus, .75; bill, 1.50.

This species lacks the black superciliary mark which is found in both the Cuban and Bahama species.

HABITAT. Island of Grand Cayman, West Indies.

**Mimocichla ravidia, sp. nov.**

SP. CHAR.—Bill large; general plumage dull ashy or brownish plumbous; no stripes on the throat which is the same color as the breast, a patch of dull white on the vent and under tail-coverts; three outer tail-feathers tipped with white on the inner webs; bill, bare space around the eye, and legs orange red; iris dull red.

Length, 9.50; wing, 5.25; tail, 4.40; tarsus, 1.50; bill, 90.

HABITAT. Island of Grand Cayman, West Indies.

**Quiscalus caymanensis, sp. nov.**

SP. CHAR.—General plumage purplish black showing a greenish gloss on the back and rump; wing-feathers showing a faint greenish gloss; quills and tail black; bill and feet black; iris yellow.

Length, 9.75; wing, 5.30; tail, 4.50; tarsus, 1.25; bill, 1.10.

HABITAT. Island of Grand Cayman, West Indies.

**Spindalis salvini, sp. nov.**

SP. CHAR.—Top of the head and cheeks black; a superciliary and malar stripe of white; a patch of yellowish orange on the upper throat, separated from the white malar stripe by a line of black which reaches the breast; chin dull white; lower throat, and breast chestnut; back dark olive, separated from the black of the head by a chestnut collar; lower back yellowish; a patch of chestnut on the carpus; rump brownish orange; belly and under tail-coverts dull white; tail black, the two outer feathers heavily marked with white; the third feather tipped with white on the inner web, the two central feathers narrowly edged with white on

the inner webs; bill horn color; feet slate brown. General appearance of *Spindalis pretrei* but having the bill heavier and throat marking unlike those of that species, besides other minor differences.

Length, 5.50; wing, 3.35; tail, 2.75; tarsus, .70; bill, .50.

HABITAT. Grand Cayman, West Indies.

I have dedicated this species to Mr. Osbert Salvin, of London, England.

#### *Vireo allenii*, sp. nov.

SP. CHAR.—Above dull olive, showing a dull yellow tinge on the forehead; a stripe of yellow from the upper mandible to the eye, the yellow showing on the upper and lower eyelids; entire under surface dull yellow, tinged with olive on the flanks and sides; two distinct yellowish white wing-bands; quills dark brown, most of the feathers edged with yellowish green on the outer webs. Tail brown, showing faint olive edgings on the outer webs; bill horn color; legs dark brown or slaty brown.

Length, 4.10; wing, 2.30; tail, 1.85; tarsus, .75; bill, .45.

HABITAT. Grand Cayman, West Indies. This interesting species is dedicated to my friend Dr. J. A. Allen, of the American Museum of Natural History, New York.

#### *Myiarchus denigratus*, sp. nov.

SP. CHAR.—Top of the head dark blackish brown; back dull olive brown; sides of the head, cheeks, and ear-coverts dark brown, slightly lighter than the crown; throat and breast ash gray, shading into dull yellowish white on the belly and crissum; quill, very dark brown, some of the feathers edged with very pale rufous; tail-feathers dark brown edged with pale rufous on the inner webs; bill and feet black.

Length, 6.25; wing, 3.15; tail, 3.00; tarsus, .80; bill, .60.

HABITAT. Grand Cayman, West Indies.

This is a very dark species, easily distinguished from any other West Indian form.

#### *Icterus bairdi*, sp. nov.

SP. CHAR.—Front of face and throat black; underparts bright yellow; back dull yellow, showing a faint tinge of olive on the upper back; tail and wings black; lesser wing-coverts bright yellow, greater secondary wing-coverts pure white, forming a broad white wing-patch, some of the inner primaries delicately edged with white, showing more clearly on the inner secondaries; bill and feet black.

Length, 7.25; wing, 3.75; tail, 3; tarsus, .85; bill, .85.

HABITAT.—Grand Cayman, West Indies.

The birds before me are all in poor plumage, being evidently moulting, but the bright yellow coloration alone is sufficient to separate it from *I. leucopteryx* of Jamaica, which is its nearest ally.

This species is named in compliment to Prof. Spencer F. Baird, of Washington, D. C.

A LIST OF THE BIRDS COLLECTED IN THE  
ISLAND OF GRAND CAYMAN, WEST IN-  
DIES, BY W. B. RICHARDSON, DUR-  
ING THE SUMMER OF 1886.

BY CHARLES B. CORY.

DURING the past summer Mr. W. B. Richardson has been collecting specimens of natural history in the small islands known as Grand and Little Cayman, which are situated south of Cuba, and some hundred and thirty miles northwest of Jamaica.

The collection of birds which was forwarded to me proved to be very rich in novelties, containing no less than thirteen species which I believe to be new and several others which vary slightly from known West Indian forms.

Mr. Richardson writes me that the island is low, and although much of it is well wooded, birds are comparatively scarce.

The following is a list of the species contained in the collection.

- Mimocichla ravidia, nobis.*
- Mimus orpheus? (Linn.).*
- Polioptila cærulea (Linn.).*
- Mniotilta varia (Linn.).*
- Dendroica cærulea Wils.*
- Dendroica dominica (Linn.).*
- Dendroica petechia gundlachi (Baird).*
- Dendroica vitellina, nobis.*
- Seiurus motacilla (Viell.).*
- Certhiola sharpei, nobis.*
- Vireo allenii, nobis.*
- Spindalis salvini, nobis.*
- Melopyrrha nigra (Linn.).*

*Euetheia olivacea* (*Gmel.*).  
*Icterus bairdi*, *nobis*.  
*Quiscalus caymanensis*, *nobis*.  
*Elainea martinica?* (*Linn.*).  
*Pitangus caudifasciatus* (*D'Orb.*).  
*Myiarchus denigratus*, *nobis*.  
*Tyrannus dominicensis* (*Gmel.*).  
*Crotophaga ani* *Linn.*.  
*Coccyzus minor* (*Gmel.*).  
*Centurus caymanensis*, *nobis*.  
*Colaptes Gundlachi*, *nobis*.  
*Chrysotis caymanensis*, *nobis*.  
*Strix flammea furcata* (*Temm.*).  
*Engyptila collaris*, *nobis*.  
*Zenaida spadicea*, *nobis*.  
*Columbigallina passerina* (*Linn.*).  
*Ægialitis semipalmata* *Bp.*  
*Arenaria interpres* (*Linn.*).  
*Actitis macularia* (*Linn.*).  
*Tringa maculata* *Vieill.*  
*Tringa minutilla* *Vieill.*  
*Ereunetes pusillus* (*Linn.*).  
*Totanus flavipes* (*Gmel.*).  
*Gallinula galeata* (*Licht.*).  
*Nycticorax violaceus* (*Linn.*).  
*Ardea tricolor ruficollis* (*Gosse*).  
*Ardea virescens* *Linn.*

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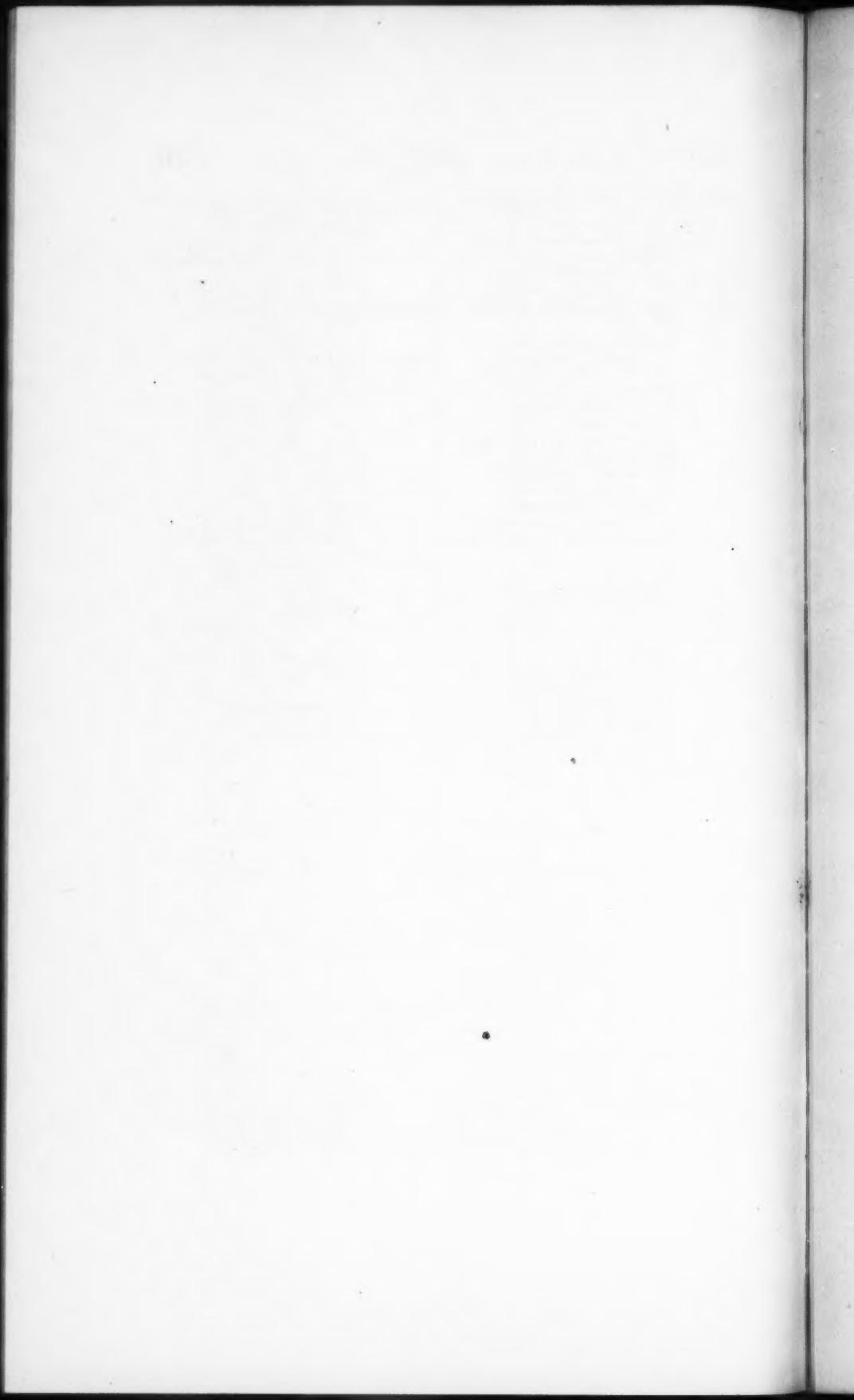
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